CCD-F330E

SERVICE MANUAL

AEP Model
Australian Model
UK Model
E Model

Handycam
Video 8

SPECIFICATIONS

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassette
Tape speed	SP: Approx. 20.051 mm/sec. LP: Approx. 10.058 mm/sec.
Recording time	SP mode: 1 hour 30 min LP mode: 3 hours (P5–90)
Playback time	SP mode: 1 hour 30 min LP mode: 3 hours (P5–90)
Fast forward time	Approx. 6 min. 30 sec. (P5–90)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder
Lens	Combined 6 × power zoom lens f = 12–72 mm, F1.6 with macro Filter diameter: 46 mm
Auto focus system	TCL
Colour temperature	Auto: From the light at a tungsten lamp to the light on a slightly overcast day.
Minimum illumination	13 lux
Illumination range	13 lux–100,000 lux (1.2–9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Automatic

Input and output connector

Video output	Phono jack, 1 Vp-p, 75 ohms unbalanced sync negative
Audio output	Phono jack, −10dBs, at output impedance less than 2.2 kilohms
RFU DC OUT	Special minijack, 5V DC
Earphone jack	Minijack, 8-ohm impedance
Remote jack	Stereo mini-minijack

Display in the viewfinder

Mode and caution indicators
Mode: REC/STBY
BACK LIGHT
Caution: BATTERY
DEW
TAPE END
CASSETTE
CAUTION
Time/date indication
Title colour indication

— Continued on next page —

MICROFILM

8 VIDEO CAMERA RECORDER

SONY®

General

Power requirements	Battery compartment 6 V/7.5 V
Power consumption	7.1 W (camera recording) including the viewfinder
Installation	Vertically
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Dimensions	Approx. 116 × 130 × 312 mm (w/h/d) ($4\,^5/_8 \times 5\,^1/_8 \times 12\,^3/_8$ in.)
Weight	Approx. 1.2 kg (2 lb 10 oz) excluding the battery and cassette
Microphone	Electret condenser microphone, omni-directional monaural type
Supplied accessories	Lithium battery CR2025 (1) Shoulder strap (1)

Precautions for replacement of CCD imager block.

- With a pair of IC701 (CCD imager) on the VC-48 complete board and IC002 (corrector ROM) on the DT-61 complete board, it is used a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager corrector ROM cannot be allowed.
- When both a CCD imager and the corrector ROM, replace both the CCD imager and the corrector ROM, when a corrector ROM is not mounted on the service set, install a corrector ROM which is supplied anew.
- IC701 (CCD imager) is not mounted on the VC-48 complete board to be supplied as a repair part, and IC002 (corrector ROM) is not mounted on the DT-61 complete board to be supplied as a repair part. When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new ones respectively.
- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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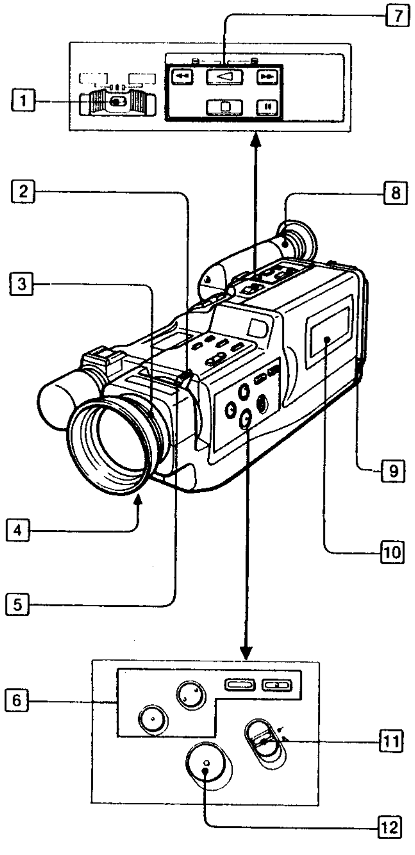
SECTION 1
GENERAL

Location and Function of Parts and Controls

A-1



A-1

1 POWER switch
CAMERA: For camera recording
PLAYER: For playing back or editing tapes
OFF: Power off

2 Macro set button

3 Focus ring

4 START/STOP button
Used for low angle recording.

5 Zoom lever

6 SUPERIMPOSE button
Used to record the title.
TITLE 1 button
TITLE 2 button
MEM (memory) button
COLOR button

7 Tape transport buttons
◄ (playback)
◄◄ FF (fast forward)
►► REW (rewind)
■ (stop)
❚❚ (pause)

8 Viewfinder
The picture being recorded or played back can be monitored in monochrome here. Also, data such as caution indicators and function mode are displayed on the viewfinder screen.

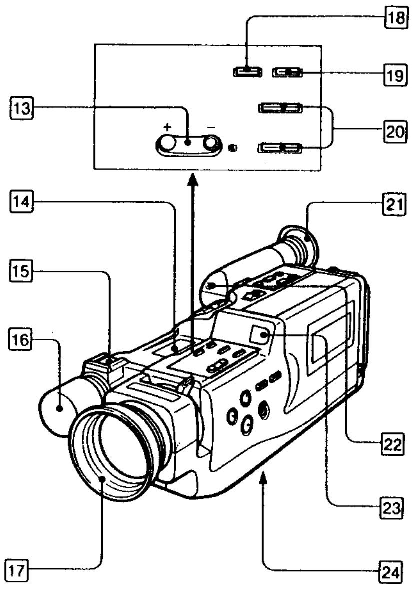
9 BATT EJECT (battery eject) knob

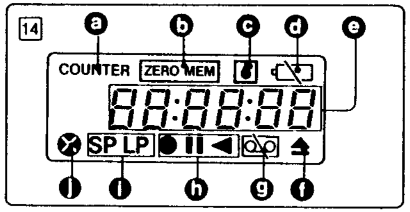
10 Cassette holder

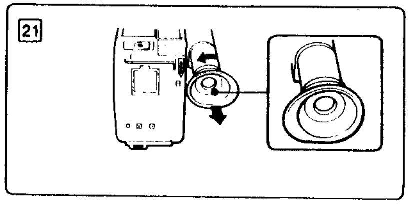
11 FOCUS switch
Normally set to AUTO for auto focusing. To focus manually, set to MAN (manual).

12 BACK LIGHT button

A-2







A-2

13 EDITSEARCH button

14 Display window
ⓐ COUNTER indicator
ⓑ ZERO MEM (memory) indicator
ⓒ Moisture condensation inside the unit.
ⓓ Blinks when the battery is weak.
ⓔ Indicates the time or the tape count.
ⓕ Blinks when moisture has condensed on the tape, when the tape approaches its end during camera recording.
ⓖ Lights steadily when no cassette is inserted. Blinks when the tape approaches its end.
ⓗ Tape operation mode indicators
ⓘ Tape speed indicator
ⓙ Lights when the slit in the head is clogged.

15 Accessory shoe
Attach an optional video light here.

16 Built-in microphone (monaural)

17 Lens hood

18 ZERO MEM (zero memory) button
Used to memorize the counter zero point.

19 RESET button
Press to reset the counter to zero.

20 DATE and TIME SET buttons
Press to display or turn off the date or time.

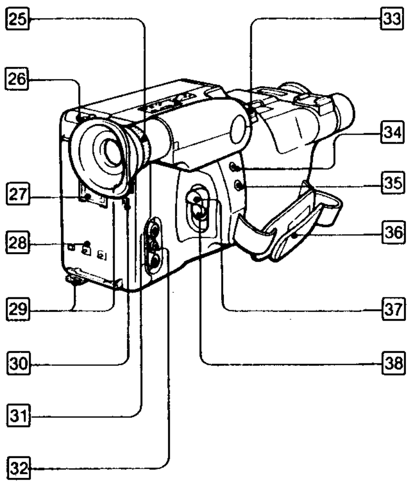
21 Eyecup
The eyecup is attached for the right eye.
For the left eye, detach the rubber eyecup and attach it as illustrated.

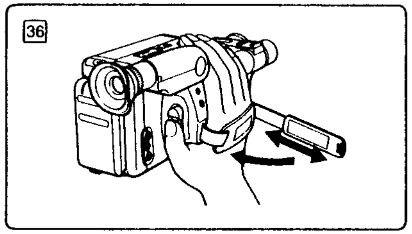
22 Camera recording/battery lamp
Lights during camera recording. It blinks when the battery is exhausted.

23 White balance sensor
This is the sensor for auto white balance adjustment.
During recording, do not cover the sensor.

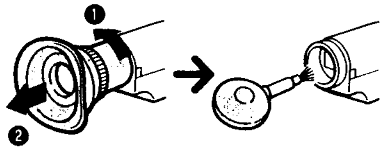
24 Tripod receptacle

A-3





A-4



A-3

25 Viewfinder lens adjustment ring
Adjust to your eyesight to assure good focus. Be sure to adjust this ring when shooting for the first time.

26 Cassette eject button

27 Lithium battery compartment

28 Battery mounting surface

29 Hooks for shoulder strap
Attach a shoulder strap.

30 REC MODE (recording mode)/EDIT switch
Switch it depending on the operating mode.

Mode	Recording	Playback	Editing
Setting	SP LP	EDIT	EDIT
Function	REC MODE switch	EDIT switch	

31 VIDEO/AUDIO OUT (output) jacks (phono jacks)

32 RFU DC OUT (RFU adaptor DC output) jack (special minijack)
Supplies power to the RFU-89EA/ASA RFU adaptor.

33 Power zoom button

34 REMOTE connector (stereo mini-minijack)

35 ⑨ (earphone) jack (minijack)

36 Grip strap
Adjust the length so that your thumb can easily manipulate the START/STOP button.

37 STANDBY switch
Slide up to set the unit to recording pause mode.

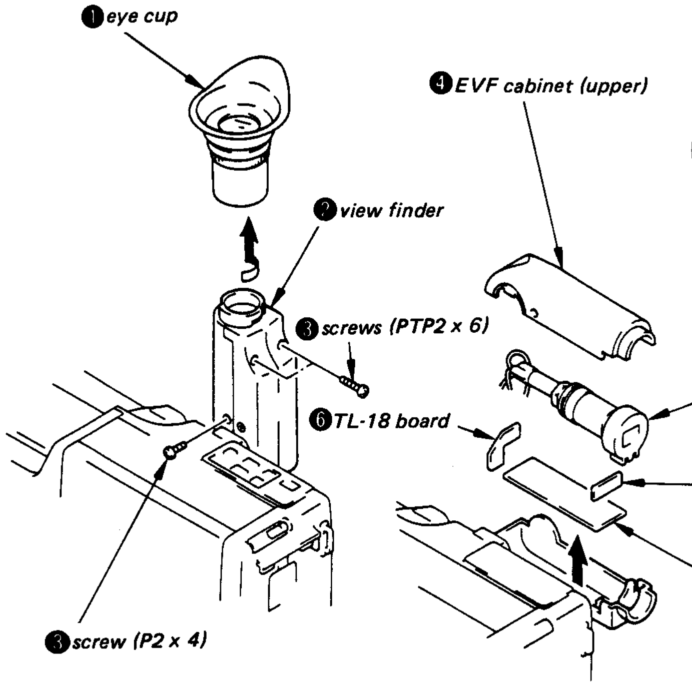
38 START/STOP button
Press to start and stop camera recording.

To remove dust from inside the viewfinder A-4
Detach the eyecup as illustrated and clean the surface of the Braun tube with a blower.

SECTION 2
DISASSEMBLY

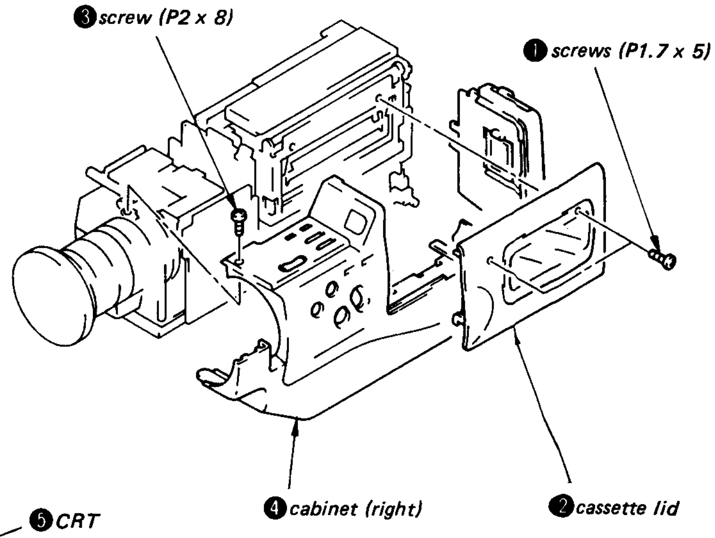
2-1. REMOVING THE VIEW FINDER

1) Turn the eye cup ❶ counterclockwise and remove.
2) Raise the view finder ❷.
3) Remove three screws ❸.
4) Put the view finder ❷ down on the bench.
5) Remove the EVF cabinet (upper) ❹, and separate the CRT ❺, TL-18 board ❻, TL-19 board ❼ and VF-13 board ❽.


❶eye cup
❹EVF cabinet (upper)
❷view finder
❸screws (PTP2 x 6)
❻TL-18 board
❺CRT
❼TL-19 board
❽VF-13 board
❸screw (P2 x 4)

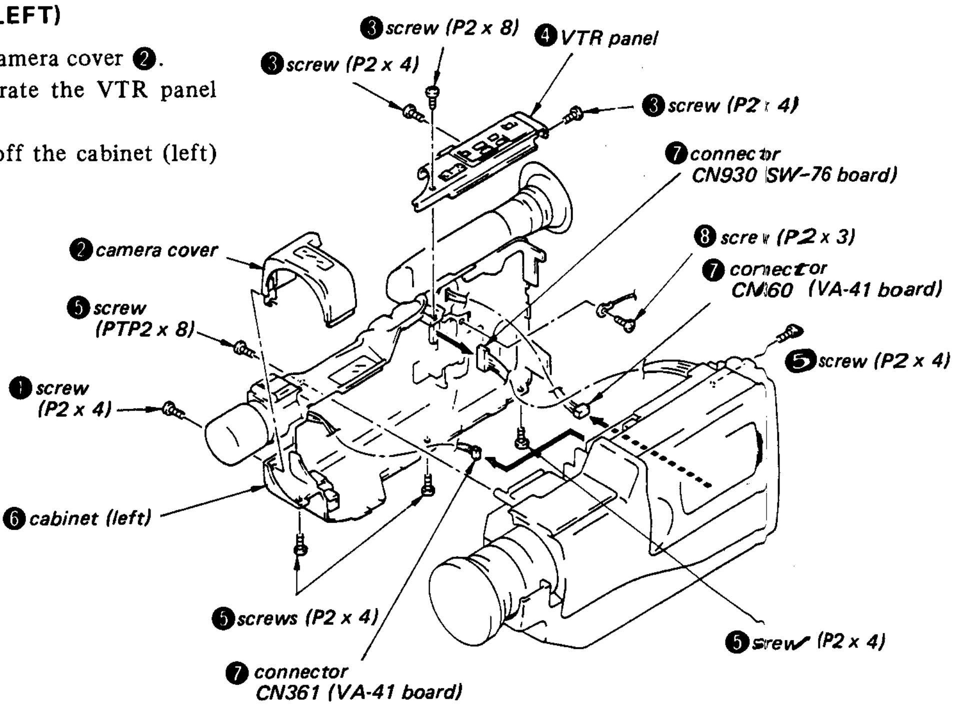
2-3. REMOVING THE CABINET (RIGHT)

1) Remove two of screws ❶ and detach the cassette lid ❷.
2) Remove screw ❸ and take off the cabinet (right) ❹.


❸screw (P2 x 8)
❶screws (P1.7 x 5)
❹cabinet (right)
❷cassette lid

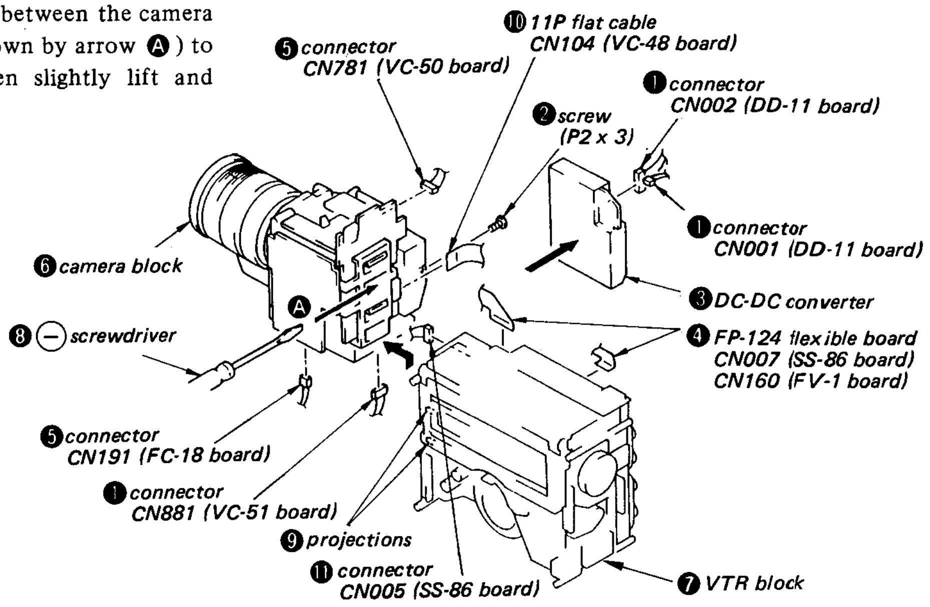
2-2. REMOVING THE CABINET (LEFT)

1) Remove screw ❶ and detach the camera cover ❷.
2) Remove three screws ❸ and separate the VTR panel ❹.
3) Remove five screws ❺ and take off the cabinet (left) ❻.
4) Unplug the three connectors ❼.
5) Remove screw ❽.


❸screw (P2 x 8)
❹VTR panel
❸screw (P2 x 4)
❸screw (P2 x 4)
❼connector
CN930 (SW-76 board)
❽screw (P2 x 3)
❼connector
CN360 (VA-41 board)
❷camera cover
❺screw
(PTP2 x 8)
❺screw (P2 x 4)
❶screw
(P2 x 4)
❻cabinet (left)
❺screws (P2 x 4)
❺screw (P2 x 4)
❼connector
CN361 (VA-41 board)

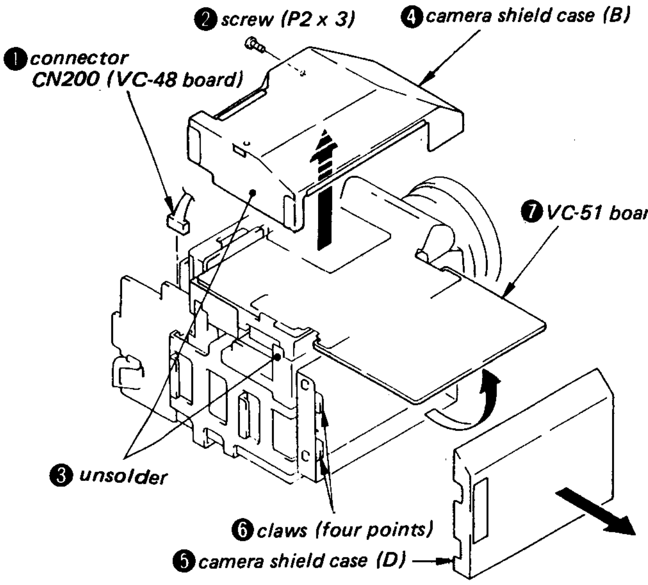
2-4. SEPARATING THE CAMERA AND VTR BLOCKS

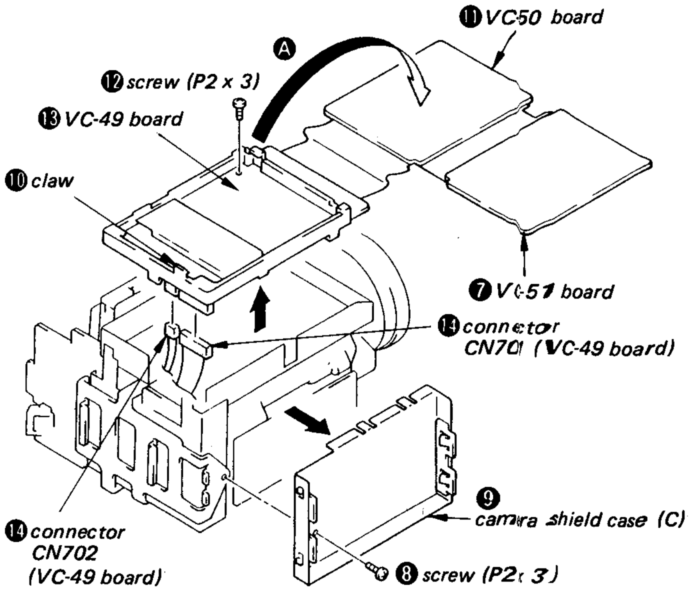
1) Unplug three connectors ❶.
2) Remove screw ❷ and take off the DC-DC converter ❸.
3) Remove the FP-124 flexible board ❹.
4) Unplug two connectors ❺.
5) Insert a flat-bladed screwdriver ❽ between the camera block ❻ and VTR block ❼ (as shown by arrow Ⓐ) to separate two projecting ❾. Then slightly lift and remove the camera block ❻.
6) Disconnect the 11P flat cable ❿.
7) Unplug connector ⓫.


❿ 11P flat cable
CN104 (VC-48 board)
❺ connector
CN781 (VC-50 board)
❶ connector
CN002 (DD-11 board)
❷ screw
(P2 x 3)
❶ connector
CN001 (DD-11 board)
❻ camera block
❸ DC-DC converter
Ⓐ
❽ ⊖ screwdriver
❹ FP-124 flexible board
CN007 (SS-86 board)
CN160 (FV-1 board)
❺ connector
CN191 (FC-18 board)
❶ connector
CN881 (VC-51 board)
❾ projections
⓫ connector
CN005 (SS-86 board)
❼ VTR block

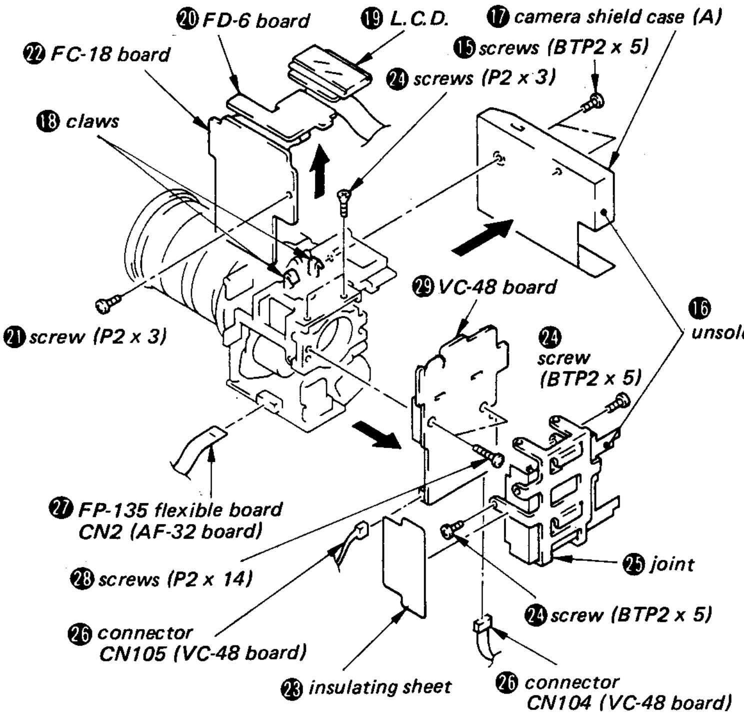
2-5. REMOVING THE VC-48 (CCD IMAGER), VC-49, VC-50, AND VC-51 BOARDS

1) Unplug connector ❶.
2) Remove screw ❷.
3) Unsolder the point ❸ and take off the camera shield case (B) ❹.
4) Remove camera shield case (D) ❺.
5) Detach the claw ❻ at 4 points and raise the VC-51 board ❼.
6) Remove screw ❽ and take off the camera shield case (C) ❾.
7) Detach the claw ❿, and open the VC-50 and VC-51 boards ⓫ and ❼ as shown by arrow Ⓐ.
8) Remove screw ⓬ and take off the VC-49 board ⓭.
9) Unplug two connectors ⓮.


❷ screw (P2 x 3)
❹ camera shield case (B)
❶ connector
CN200 (VC-48 board)
❼ VC-51 board
❸ unsolder
❻ claws (four points)
❺ camera shield case (D)


⓫ VC-50 board
Ⓐ
⓬ screw (P2 x 3)
⓭ VC-49 board
❿ claw
❼ VC-51 board
⓮ connector
CN701 (VC-49 board)
❾
camera shield case (C)
⓮ connector
CN702
(VC-49 board)
❽ screw (P2 x 3)

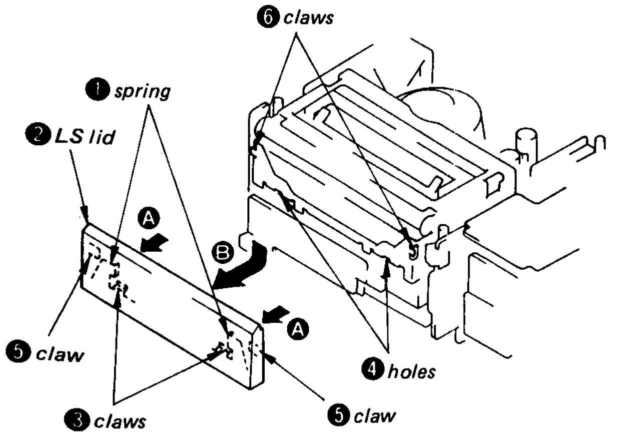
10) Remove two screws ⑮.
11) Unsolder the point ⑯ and take off the camera shield case (A) ⑰.
12) Release the claw ⑱ at 2 locations, and remove the LCD ⑲ and FD-6 board ⑳.
13) Remove screw ㉑ and take off the FC-18 board ㉒.
14) Take of the insulating sheet ㉓.
15) Remove four screws ㉔ and take off the joint ㉕.
16) Unplug two connectors ㉖.
17) Remove the FP-135 flexible board ㉗.
18) Remove two screws ㉘ and take off the VC-48 board ㉙.


⑳ FD-6 board
⑲ L.C.D.
⑰ camera shield case (A)
㉒ FC-18 board
⑮ screws (BTP2 x 5)
㉔ screws (P2 x 3)
⑱ claws
㉙ VC-48 board
⑯ unsolder
㉑ screw (P2 x 3)
㉔ screw (BTP2 x 5)
㉗ FP-135 flexible board CN2 (AF-32 board)
㉕ joint
㉘ screws (P2 x 14)
㉔ screw (BTP2 x 5)
㉖ connector CN105 (VC-48 board)
㉓ insulating sheet
㉖ connector CN104 (VC-48 board)

2-6. REMOVING THE LS LID

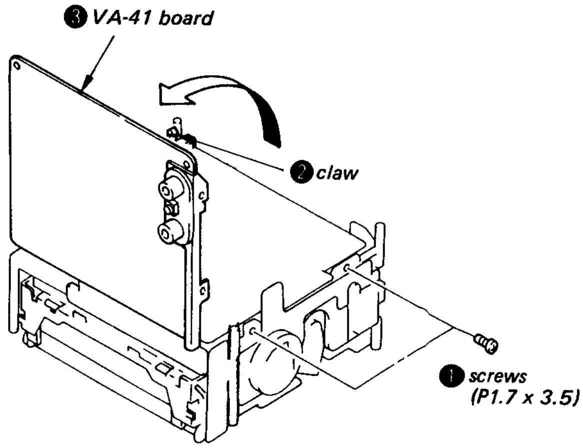
1) Insert a thin flat-bladed screwdriver into the spring ① at 2 points and push it in the direction of arrow Ⓐ, and then remove the LS lid ② in the direction of arrow Ⓑ.

Note: To re-assemble, locate the two claws ③ at the back of each hole ④ at 2 points, and also the two claws ⑤ at the back of each claw ⑥ at 2 locations.


⑥ claws
① spring
② LS lid
Ⓐ
Ⓑ
Ⓐ
⑤ claw
④ holes
③ claws
⑤ claw

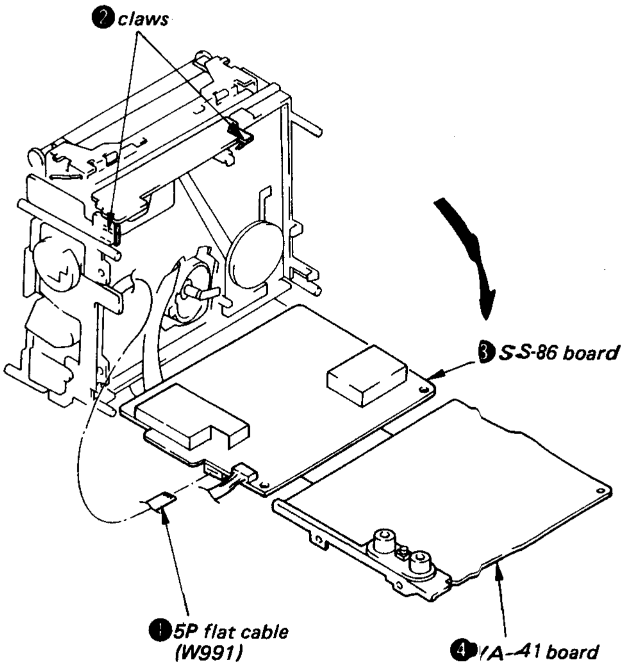
2-7. OPENING THE VA-41 BOARD

1) Remove two screws ①.
2) Release single claw ②.
3) Open the VA-41 board ③ as shown by the arrow.


③ VA-41 board
② claw
① screws (P1.7 x 3.5)

2-8. OPENING THE SS-86 BOARD

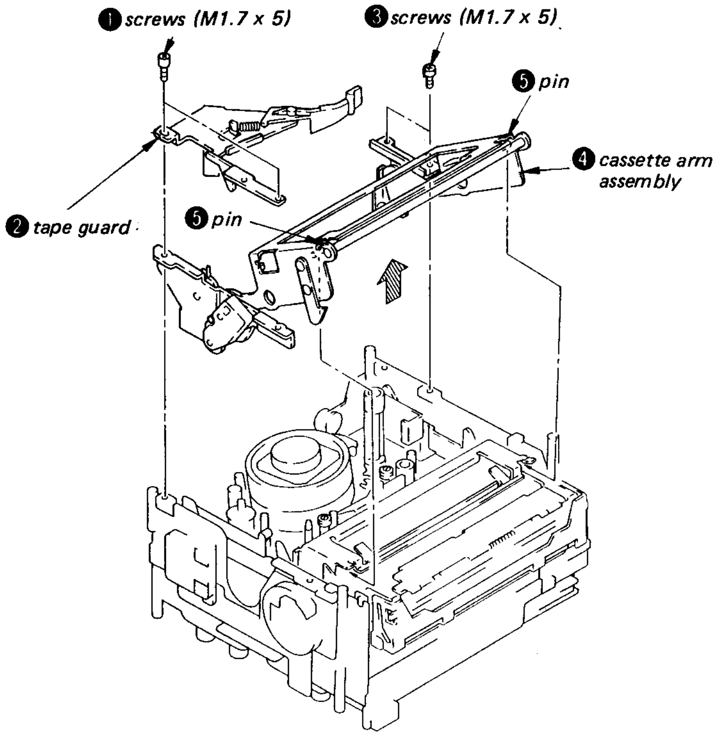
1) Disconnect the 5P flat cable ①.
2) Release the claw ② at two points, and open the SS-86 and VA-41 boards ③ and ④ as shown by the arrow.


② claws
③ SS-86 board
① 5P flat cable (W991)
④ VA-41 board

2-9. REMOVING THE CASSETTE ARM

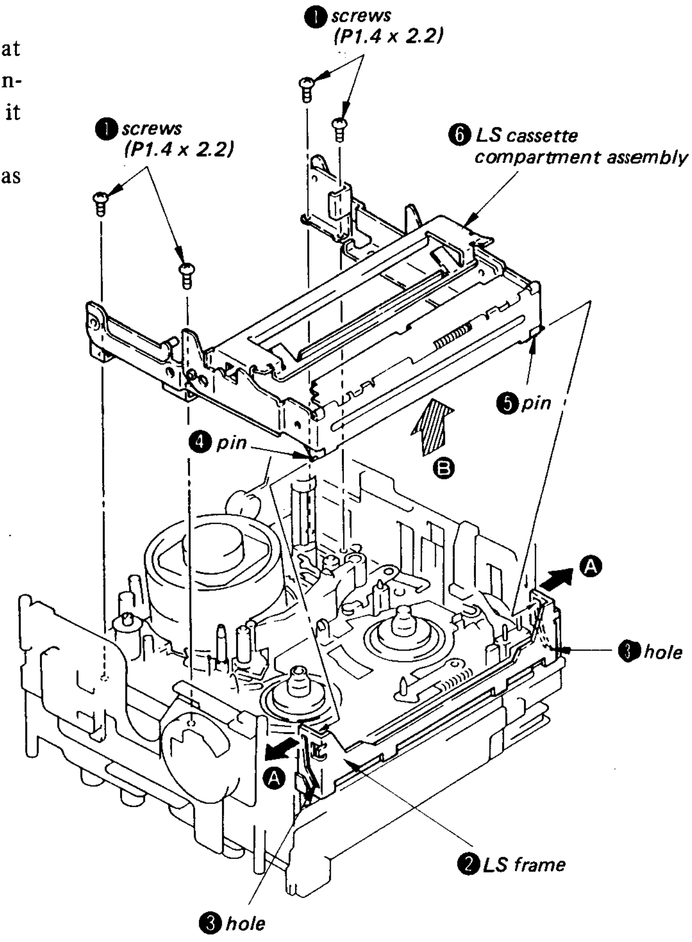
1) Remove two screws ❶ and take off the tape guard ❷.
2) Remove two screws ❸ and take off the cassette arm assembly ❹ in the direction of the arrow.

Note: To re-assembly the cassette arm assembly ❹, adjust it so that pin ❺ can be inserted in the correct position.


❶screws (M1.7 x 5)
❸screws (M1.7 x 5)
❺pin
❹cassette arm assembly
❷tape guard
❺pin

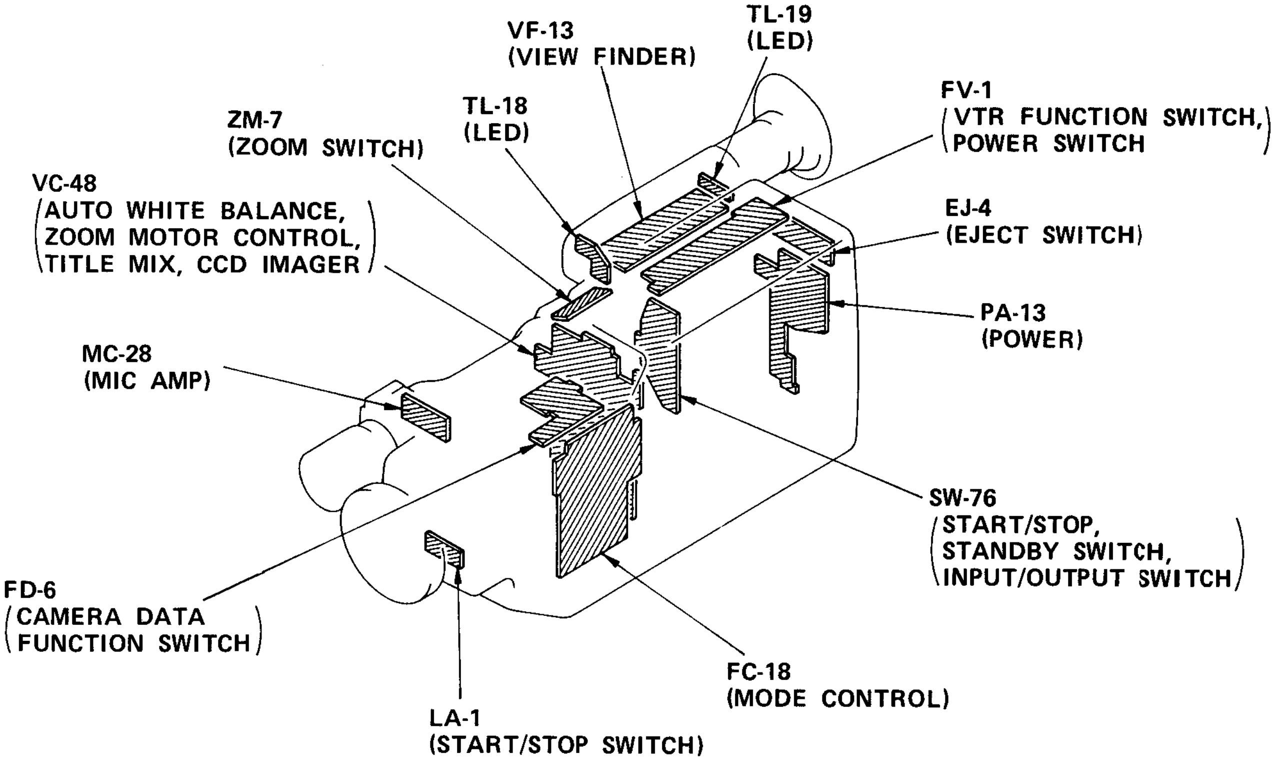
2-10. REMOVING LS CASSETTE COMPARTMENT ASSEMBLY

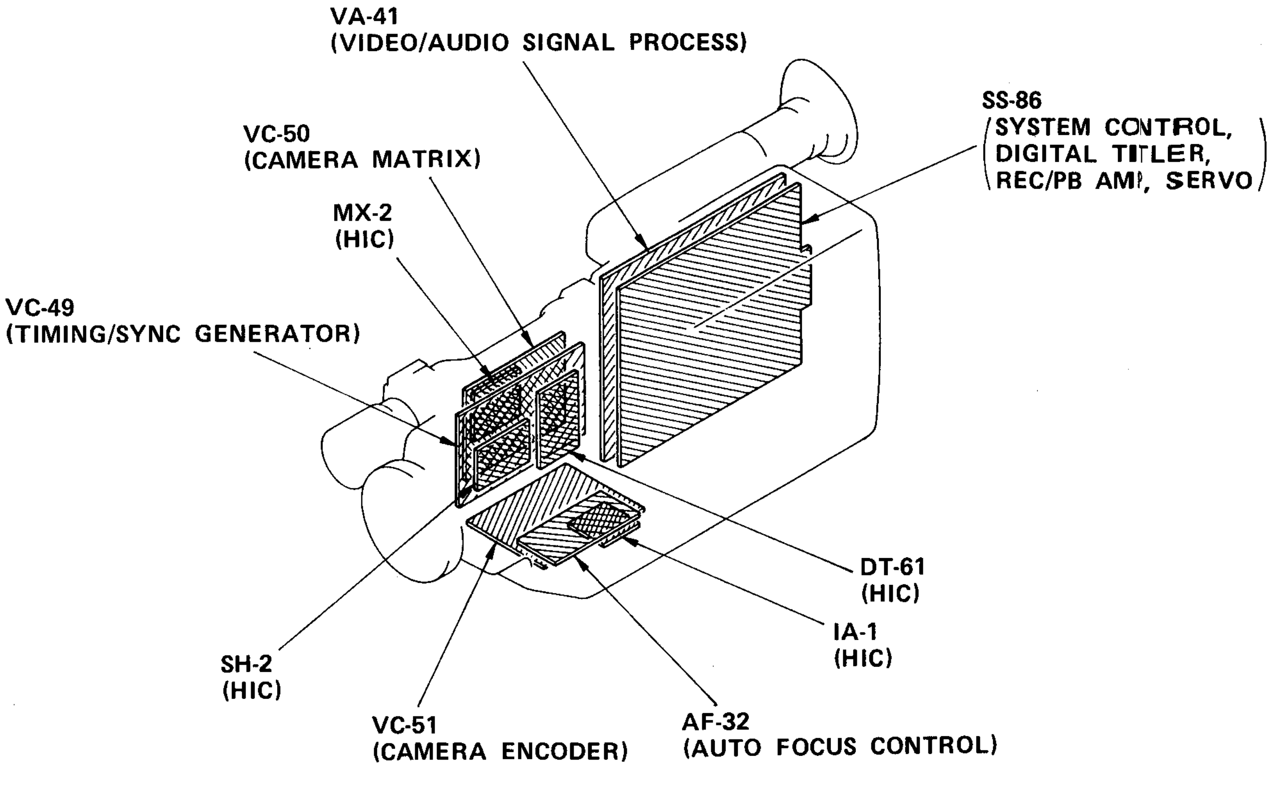
1) Remove four screws ❶.
2) Press the recessed parts, or hole ❸ on LS frame ❷ at 2 points as shown by the arrow Ⓐ in order to disconnect pins ❹ and ❺. (First disconnect pin ❹ since it is shorter than pin ❺.)
3) Remove the LS cassette compartment assembly ❻ as shown by the arrow Ⓑ.


❶screws (P1.4 x 2.2)
❶screws (P1.4 x 2.2)
❻LS cassette compartment assembly
❺pin
❹pin
Ⓑ
Ⓐ
❸hole
Ⓐ
❷LS frame
❸hole

SECTION 3
DIAGRAMS

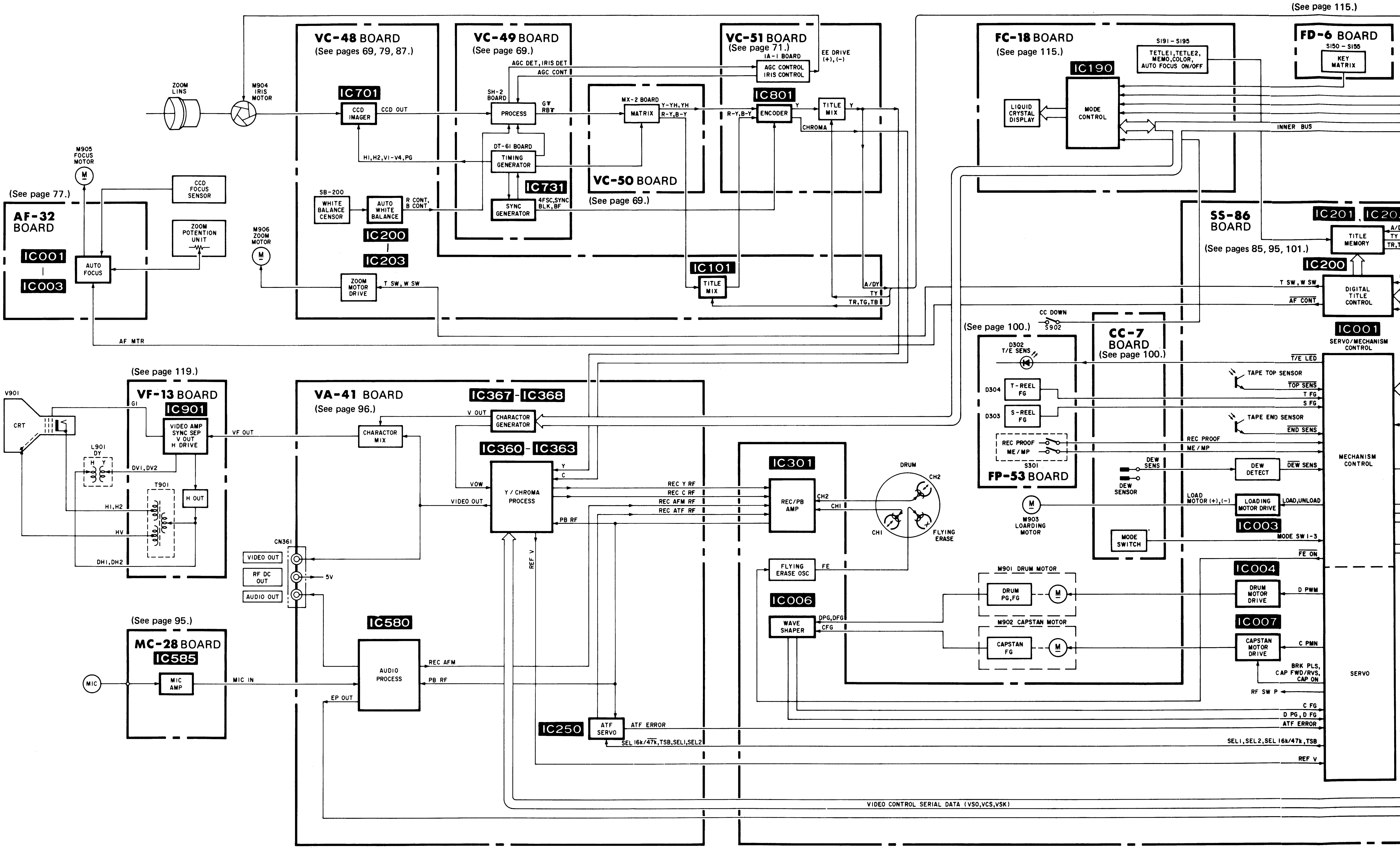
3-1. CIRCUIT BOARDS LOCATION

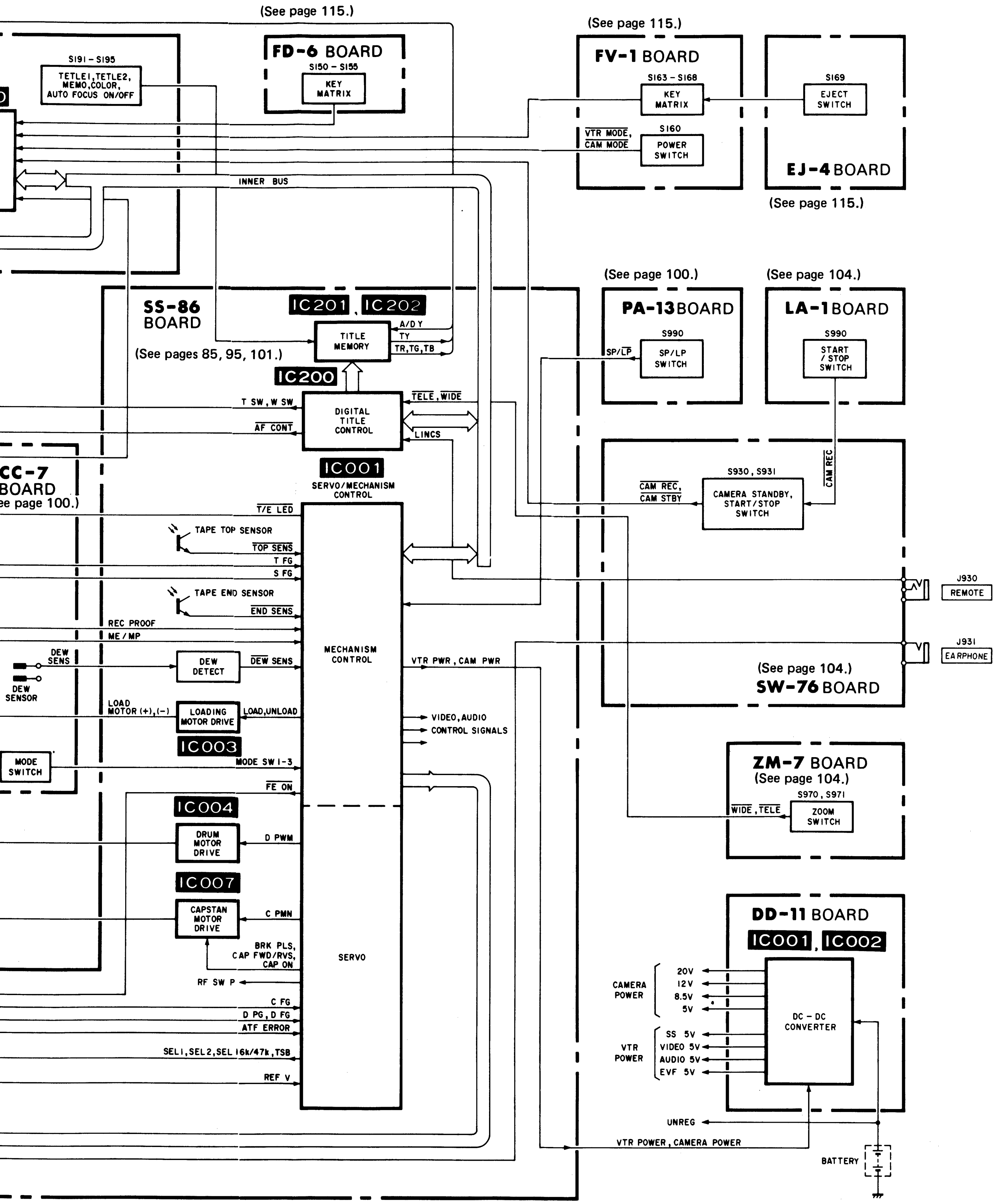

VF-13
(VIEW FINDER)
TL-19
(LED)
TL-18
(LED)
ZM-7
(ZOOM SWITCH)
FV-1
(VTR FUNCTION SWITCH, POWER SWITCH)
VC-48
(AUTO WHITE BALANCE, ZOOM MOTOR CONTROL, TITLE MIX, CCD IMAGER)
EJ-4
(EJECT SWITCH)
PA-13
(POWER)
MC-28
(MIC AMP)
SW-76
(START/STOP, STANDBY SWITCH, INPUT/OUTPUT SWITCH)
FD-6
(CAMERA DATA FUNCTION SWITCH)
FC-18
(MODE CONTROL)
LA-1
(START/STOP SWITCH)


VA-41
(VIDEO/AUDIO SIGNAL PROCESS)
SS-86
(SYSTEM CONTROL, DIGITAL TITLER, REC/PB AMP, SERVO)
VC-50
(CAMERA MATRIX)
MX-2
(HIC)
VC-49
(TIMING/SYNC GENERATOR)
DT-61
(HIC)
IA-1
(HIC)
SH-2
(HIC)
VC-51
(CAMERA ENCODER)
AF-32
(AUTO FOCUS CONTROL)

3-2. OVERALL BLOCK DIAGRAM

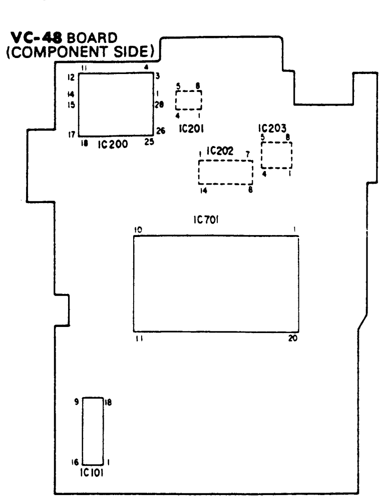
- ( ) near the board name indicates the schematic diagram page.

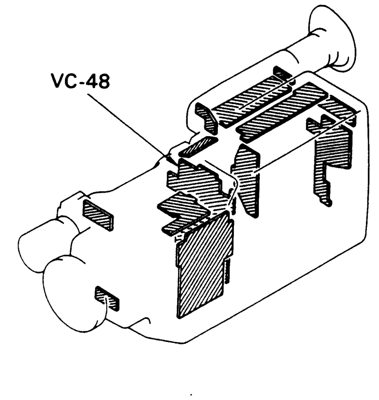

(See page 115.)
VC-48 BOARD
(See pages 69, 79, 87.)
IC701
CCD IMAGER
CCD OUT
H1,H2,V1-V4,PG
SB-200
WHITE BALANCE CENSOR
AUTO WHITE BALANCE
R CONT, B CONT
IC200
IC203
ZOOM MOTOR DRIVE
T SW, W SW
VC-49 BOARD
(See page 69.)
AGC DET, IRIS DET
AGC CONT
SH-2 BOARD
PROCESS
GY RBY
DT-61 BOARD
TIMING GENERATOR
IC731
SYNC GENERATOR
4FSC,SYNC BLK, BF
MX-2 BOARD
MATRIX
Y-YH,YH
R-Y,B-Y
VC-50 BOARD
(See page 69.)
VC-51 BOARD
(See page 71.)
IA-1 BOARD
AGC CONTROL IRIS CONTROL
EE DRIVE (+),(-)
IC801
ENCODER
Y
CHROMA
TITLE MIX
IC101
TITLE MIX
A/DY
TY
TR,TG,TB
ZOOM LINS
M904 IRIS MOTOR
M905 FOCUS MOTOR
CCD FOCUS SENSOR
ZOOM POTENTION UNIT
M906 ZOOM MOTOR
(See page 77.)
AF-32 BOARD
IC001
IC003
AUTO FOCUS
AF MTR
FC-18 BOARD
(See page 115.)
IC190
LIQUID CRYSTAL DISPLAY
MODE CONTROL
S191 – S195
TETLE1,TETLE2, MEMO,COLOR, AUTO FOCUS ON/OFF
INNER BUS
FD-6 BOARD
S150 – S155
KEY MATRIX
SS-86 BOARD
(See pages 85, 95, 101.)
IC201, IC20
TITLE MEMORY
A/D
TY
TR,T
IC200
DIGITAL TITLE CONTROL
T SW, W SW
AF CONT
IC001
SERVO/MECHANISM CONTROL
T/E LED
TAPE TOP SENSOR
TOP SENS
T FG
S FG
TAPE END SENSOR
END SENS
REC PROOF
ME/MP
DEW DETECT
DEW SENS
LOAD MOTOR (+),(-)
LOADING MOTOR DRIVE
LOAD,UNLOAD
IC003
MODE SW 1-3
FE ON
MECHANISM CONTROL
IC004
DRUM MOTOR DRIVE
D PWM
IC007
CAPSTAN MOTOR DRIVE
C PWM
BRK PLS, CAP FWD/RVS, CAP ON
RF SW P
SERVO
C FG
D PG, D FG
ATF ERROR
SEL1,SEL2,SEL 16k/47k,TSB
REF V
(See page 100.)
CC DOWN
S902
D302 T/E SENS
D304
T-REEL FG
D303
S-REEL FG
REC PROOF
ME/MP
S301
FP-53 BOARD
CC-7 BOARD
(See page 100.)
DEW SENS
DEW SENSOR
MODE SWITCH
M903 LOARDING MOTOR
M901 DRUM MOTOR
DRUM PG,FG
M902 CAPSTAN MOTOR
CAPSTAN FG
DRUM
CH2
CH1
FLYING ERASE
IC301
REC/PB AMP
FLYING ERASE OSC
FE
IC006
WAVE SHAPER
DPG,DFG
CFG
V901
CRT
(See page 119.)
VF-13 BOARD
G1
IC901
VIDEO AMP SYNC SEP V OUT H DRIVE
VF OUT
L901 DY
H
V
DV1,DV2
T901
H OUT
H1,H2
HV
DH1,DH2
VA-41 BOARD
(See page 96.)
CHARACTOR MIX
IC367-IC368
V OUT
CHARACTOR GENERATOR
IC360-IC363
VOW
VIDEO OUT
Y / CHROMA PROCESS
Y
C
REC Y RF
REC C RF
REC AFM RF
REC ATF RF
PB RF
REF V
CN361
VIDEO OUT
RF DC OUT
AUDIO OUT
5V
IC580
AUDIO PROCESS
REC AFM
PB RF
EP OUT
IC250
ATF SERVO
ATF ERROR
SEL 16k/47k,TSB,SEL1,SEL2
VIDEO CONTROL SERIAL DATA (VSO,VCS,VSK)
(See page 95.)
MC-28 BOARD
IC585
MIC
MIC AMP
MIC IN

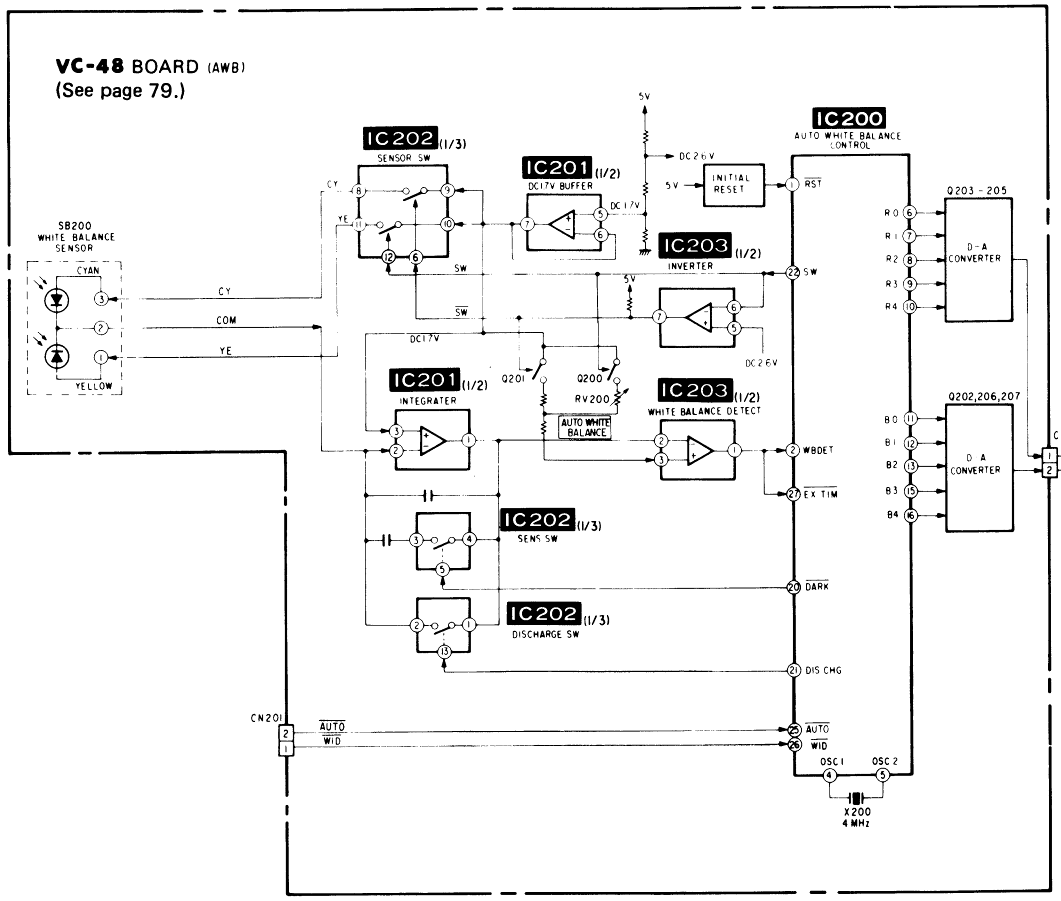

(See page 115.)
FD-6 BOARD
S150 – S155
KEY MATRIX
S191 – S195
TETLE1,TETLE2, MEMO,COLOR, AUTO FOCUS ON/OFF
INNER BUS
(See page 115.)
FV-1 BOARD
S163 – S168
KEY MATRIX
S160
POWER SWITCH
VTR MODE, CAM MODE
S169
EJECT SWITCH
EJ-4 BOARD
(See page 115.)
SS-86 BOARD
(See pages 85, 95, 101.)
IC201, IC202
TITLE MEMORY
A/D Y
TY
TR,TG,TB
IC200
DIGITAL TITLE CONTROL
T SW, W SW
AF CONT
TELE, WIDE
LINCS
IC001
SERVO/MECHANISM CONTROL
CC-7
BOARD
ee page 100.)
T/E LED
TAPE TOP SENSOR
TOP SENS
T FG
S FG
TAPE END SENSOR
END SENS
REC PROOF
ME / MP
DEW SENS
DEW SENSOR
DEW DETECT
DEW SENS
LOAD MOTOR (+),(–)
LOADING MOTOR DRIVE
LOAD,UNLOAD
IC003
MODE SWITCH
MODE SW 1-3
FE ON
MECHANISM CONTROL
VTR PWR, CAM PWR
VIDEO, AUDIO
CONTROL SIGNALS
IC004
DRUM MOTOR DRIVE
D PWM
IC007
CAPSTAN MOTOR DRIVE
C PMN
BRK PLS, CAP FWD/RVS, CAP ON
RF SW P
C FG
D PG, D FG
ATF ERROR
SEL1,SEL2,SEL 16k/47k,TSB
REF V
SERVO
(See page 100.)
PA-13 BOARD
S990
SP/LP SWITCH
SP/LP
(See page 104.)
LA-1 BOARD
S990
START / STOP SWITCH
CAM REC
S930, S931
CAMERA STANDBY, START/STOP SWITCH
CAM REC, CAM STBY
J930
REMOTE
J931
EARPHONE
(See page 104.)
SW-76 BOARD
ZM-7 BOARD
(See page 104.)
S970, S971
ZOOM SWITCH
WIDE, TELE
DD-11 BOARD
IC001, IC002
DC – DC CONVERTER
CAMERA POWER
20V
12V
8.5V
5V
VTR POWER
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
UNREG
VTR POWER, CAMERA POWER
BATTERY

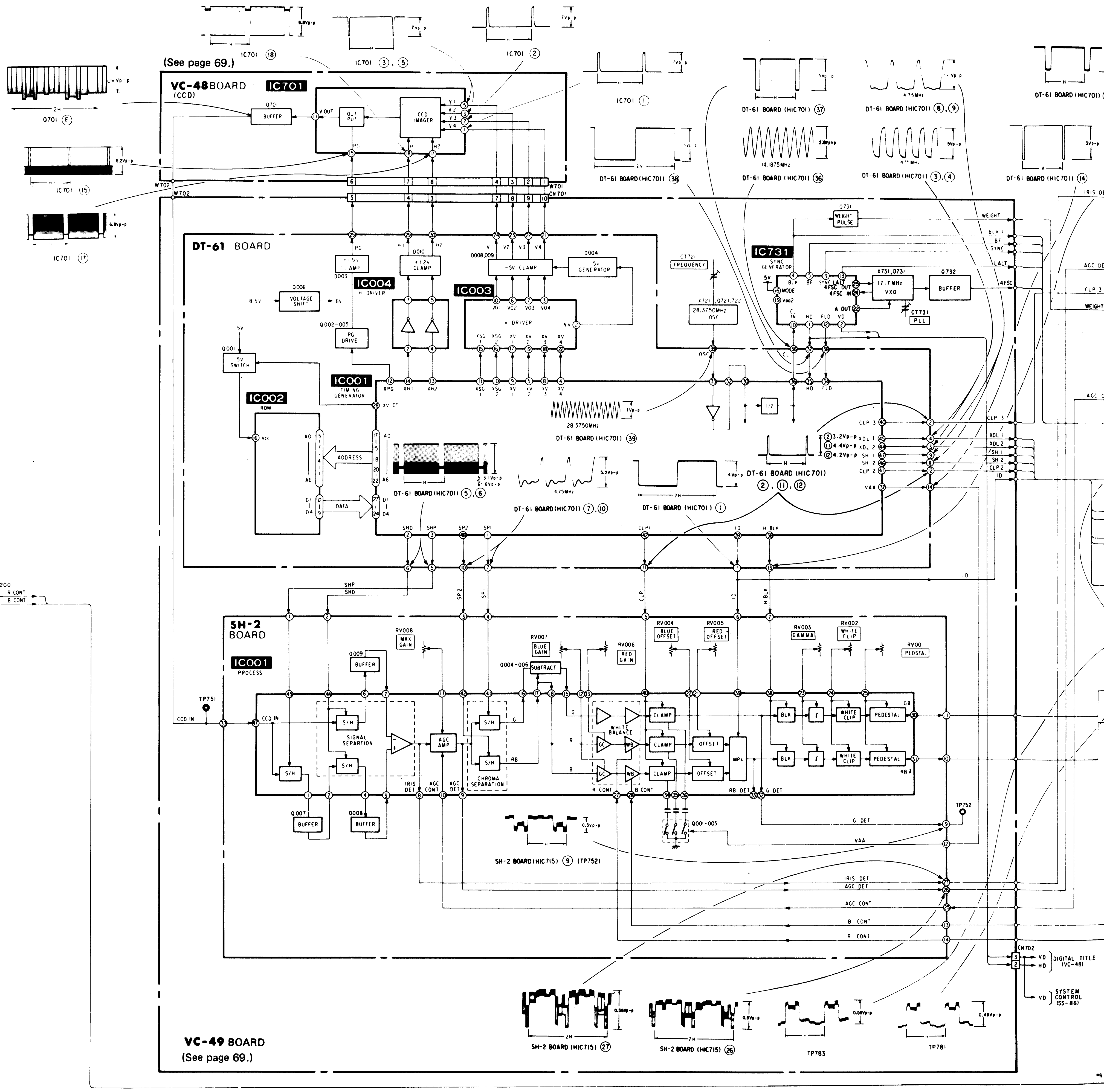
3-3. CAMERA BLOCK DIAGRAM

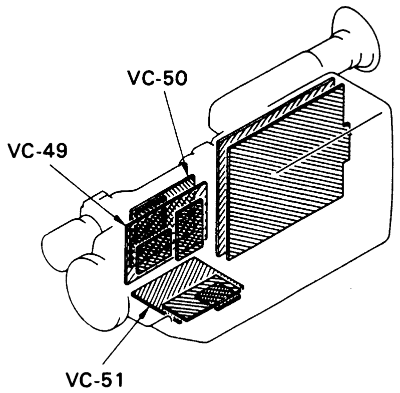
- ( ) near the board name indicates the schematic diagram page.
- Components on the rear side indicated by "- - -" line.

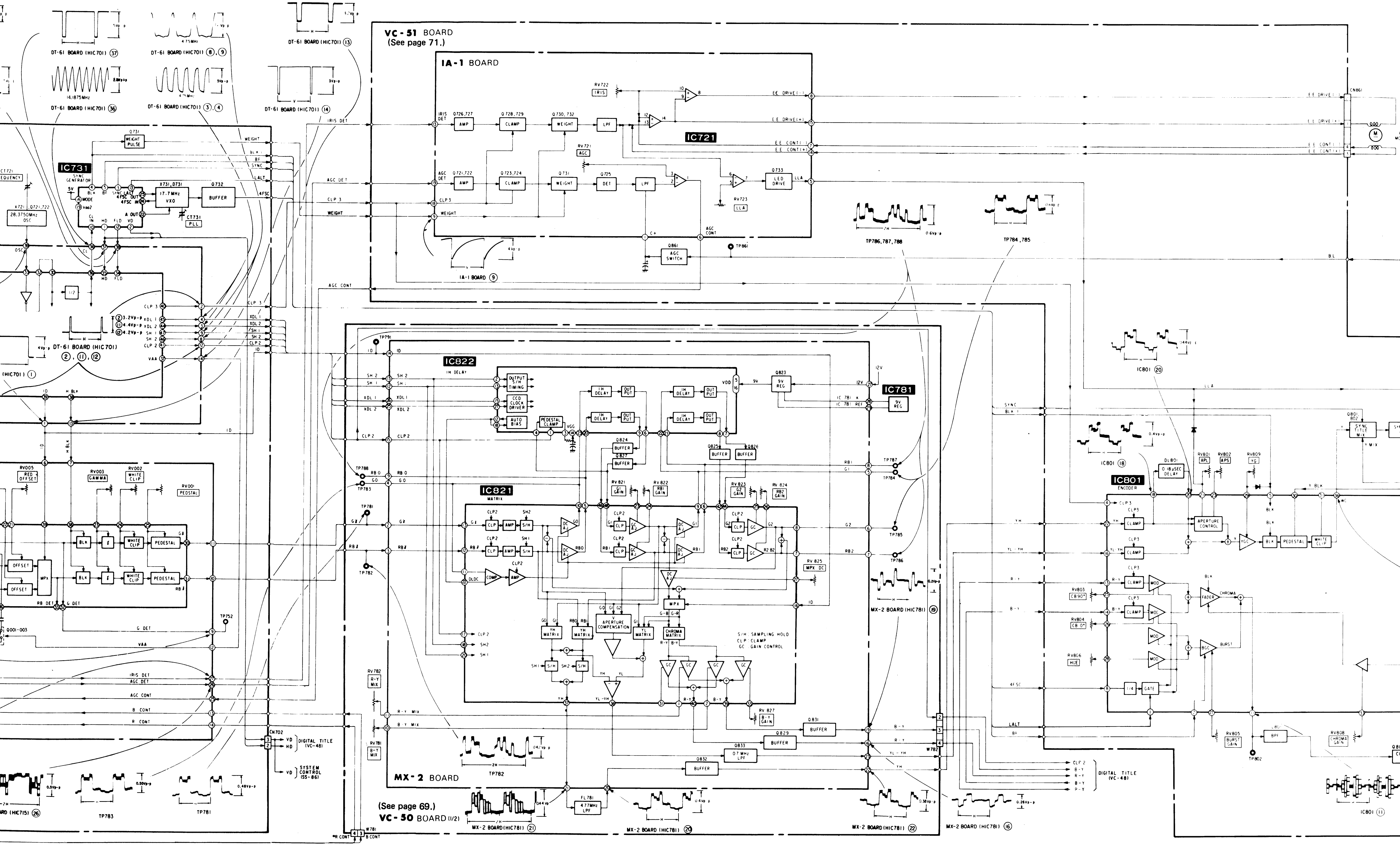

VC-48 BOARD
(COMPONENT SIDE)
IC200
IC201
IC202
IC203
IC701
IC101

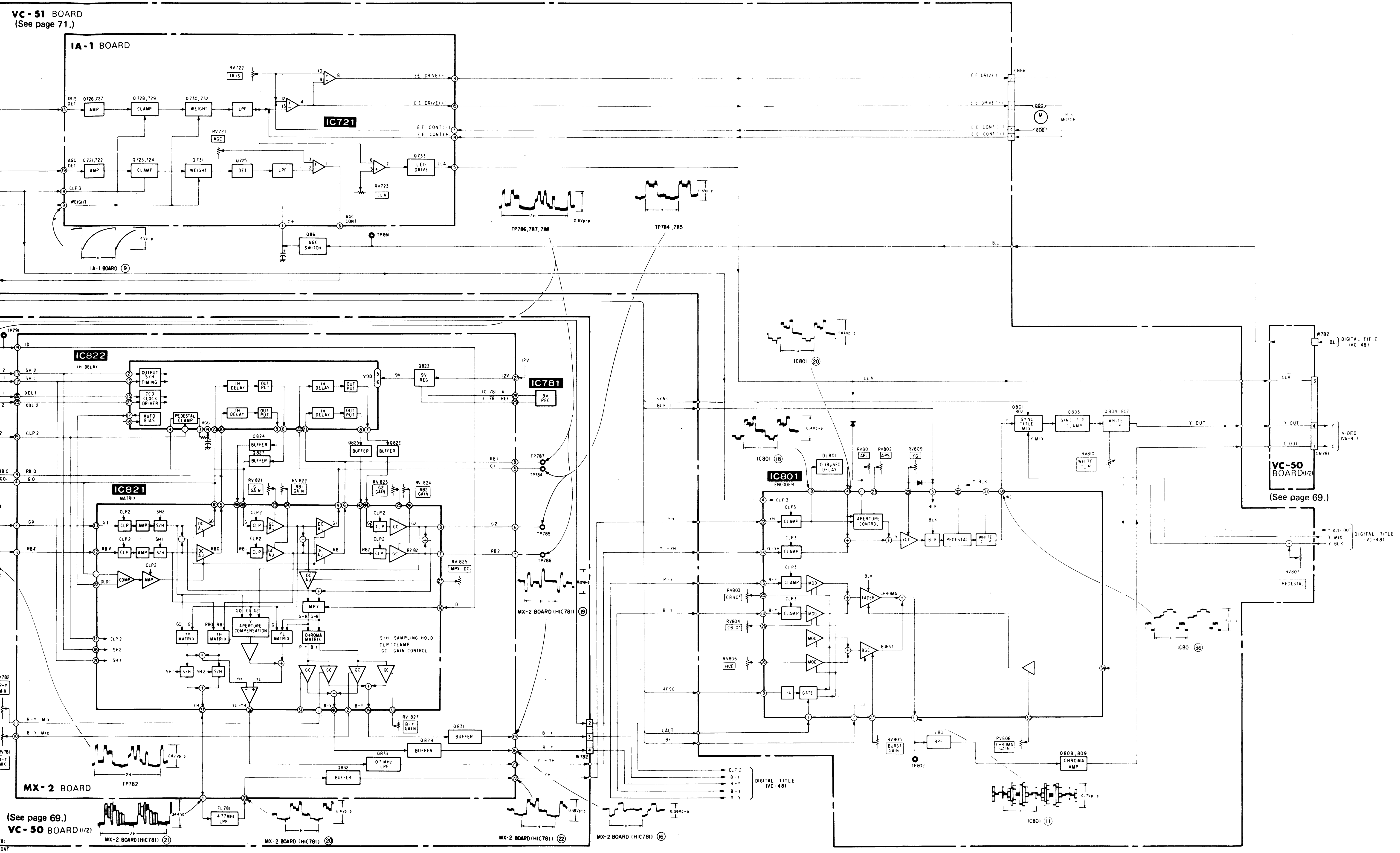



VC-48 BOARD (AWB)
(See page 79.)
SB200
WHITE BALANCE SENSOR
CYAN
YELLOW
CY
COM
YE
IC202 (1/3)
SENSOR SW
IC201 (1/2)
DC17V BUFFER
IC203 (1/2)
INVERTER
IC201 (1/2)
INTEGRATER
IC203 (1/2)
WHITE BALANCE DETECT
IC202 (1/3)
SENS SW
IC202 (1/3)
DISCHARGE SW
Q201
Q200
RV200
AUTO WHITE BALANCE
INITIAL RESET
IC200
AUTO WHITE BALANCE CONTROL
RST
SW
WBDET
EX TIM
DARK
DIS CHG
AUTO
WID
OSC1
OSC2
X200
4 MHz
Q203 - 205
D-A CONVERTER
Q202,206,207
D-A CONVERTER
R0 R1 R2 R3 R4
B0 B1 B2 B3 B4
CN200
R CONT
B CONT
CN201
DC 2.6V
DC17V
5V


(See page 69.)
VC-48 BOARD
(CCD)
IC701
Q701
BUFFER
V OUT
OUT PUT
CCD IMAGER
V1 V2 V3 V4
PG
H1 H2
W701
W702
CN701
Q701 (E)
IC701 (15)
IC701 (17)
IC701 (18)
IC701 (3), (5)
IC701 (2)
IC701 (1)
2H
DT-61 BOARD
IC004
H DRIVER
IC003
V DRIVER
D010
+12V CLAMP
D008,009
-5V CLAMP
D004
5V GENERATOR
D003
+15V CLAMP
Q006
VOLTAGE SHIFT
Q002-005
PG DRIVE
Q001
5V SWITCH
IC001
TIMING GENERATOR
IC002
ROM
ADDRESS
DATA
XV CT
XPG
XH1
XH2
XSG1 XSG2 XV1 XV2 XV3 XV4
SHD SHP SP2 SP1
CLP1
ID
H BLK
CT721
FREQUENCY
X721, Q721,722
28.3750MHz
OSC
IC731
SYNC GENERATOR
BLK
BF
SYNC
LALT
4FSC OUT
4FSC IN
A OUT
MODE
VDD2
CL IN
HD
FLD
VD
X731, D731
17.7MHz
VXO
CT731
PLL
Q731
WEIGHT PULSE
Q732
BUFFER
WEIGHT
IRIS DET
AGC DET
AGC CONT
CLP 3
XDL 1
XDL 2
SH 1
SH 2
CLP 2
VAA
28.3750MHz
DT-61 BOARD (HIC701) (39)
DT-61 BOARD (HIC701) (5), (6)
DT-61 BOARD (HIC701) (7), (10)
DT-61 BOARD (HIC701) (1)
DT-61 BOARD (HIC701) (2), (11), (12)
DT-61 BOARD (HIC701) (37)
DT-61 BOARD (HIC701) (8), (9)
DT-61 BOARD (HIC701) (38)
DT-61 BOARD (HIC701) (36)
DT-61 BOARD (HIC701) (3), (4)
DT-61 BOARD (HIC701) (14)
14.1875MHz
4.75MHz
SH-2 BOARD
IC001
PROCESS
Q009
BUFFER
Q007
BUFFER
Q008
BUFFER
Q004-006
SUBTRACT
RV008
MAX GAIN
RV007
BLUE GAIN
RV006
RED GAIN
RV004
BLUE OFFSET
RV005
RED OFFSET
RV003
GAMMA
RV002
WHITE CLIP
RV001
PEDESTAL
TP751
CCD IN
S/H
SIGNAL SEPARTION
AGC AMP
CHROMA SEPARATION
WHITE BALANCE
GC
WB
CLAMP
OFFSET
MPX
BLK
WHITE CLIP
PEDESTAL
IRIS DET
AGC CONT
AGC DET
R CONT
B CONT
RB DET
G DET
Q001-003
TP752
VAA
SH-2 BOARD (HIC715) (9) (TP752)
SH-2 BOARD (HIC715) (27)
SH-2 BOARD (HIC715) (26)
TP783
TP781
CN702
VD
HD
DIGITAL TITLE (VC-48)
SYSTEM CONTROL (SS-86)
VC-49 BOARD
(See page 69.)


VC-50
VC-49
VC-51

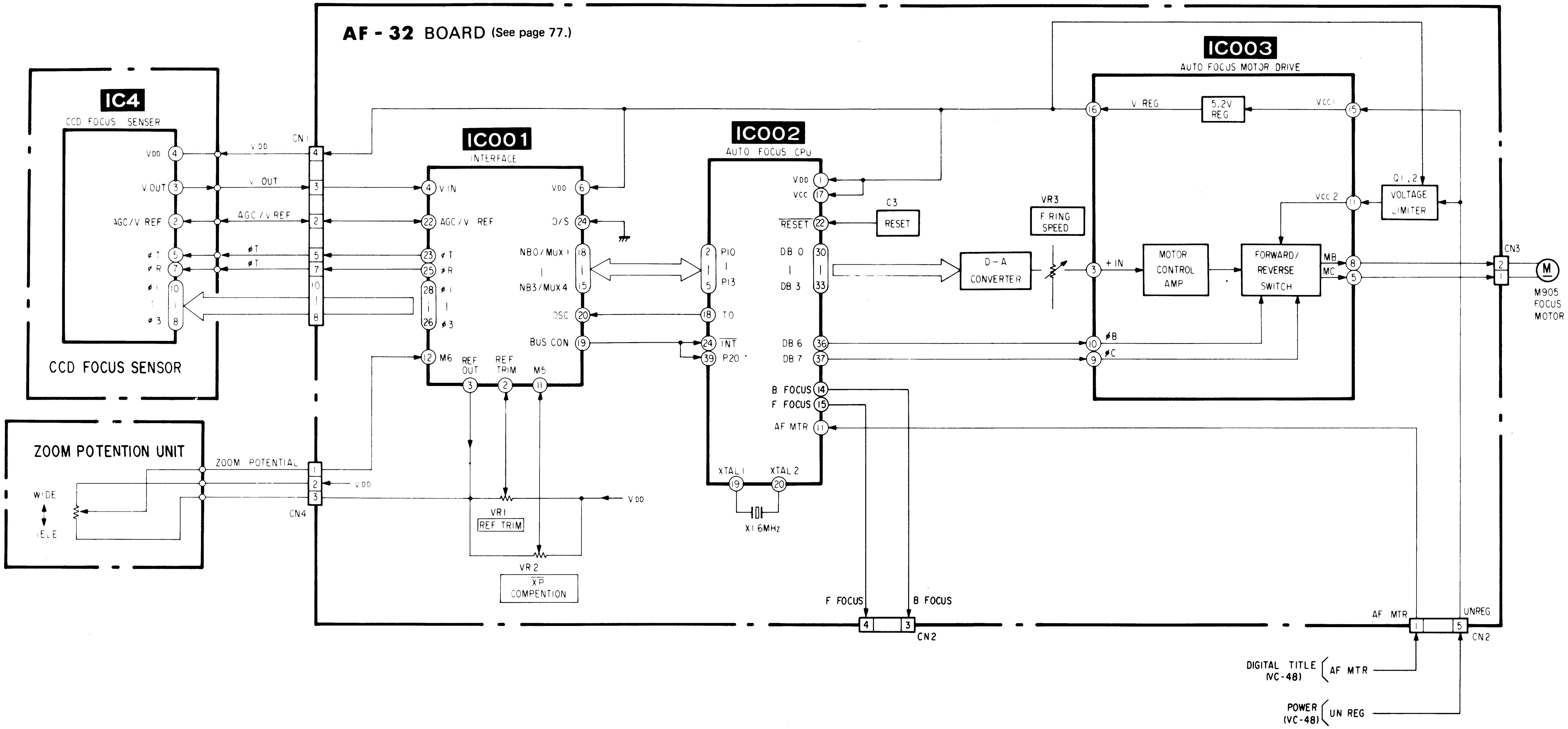

DT-61 BOARD (HIC701) ㊲
DT-61 BOARD (HIC701) ⑧,⑨
DT-61 BOARD (HIC701) ⑬
DT-61 BOARD (HIC701) ㊱
DT-61 BOARD (HIC701) ③,④
DT-61 BOARD (HIC701) ⑭
14.1875MHz
4.75MHz
VC-51 BOARD
(See page 71.)
IA-1 BOARD
IC721
IRIS DET
AGC DET
CLP 3
WEIGHT
AGC CONT
Q726,727 AMP
Q728,729 CLAMP
Q730,732 WEIGHT
LPF
Q721,722 AMP
Q723,724 CLAMP
Q731 WEIGHT
Q725 DET
RV722 IRIS
RV721 AGC
RV723 LLA
Q733 LED DRIVE
LLA
E.E DRIVE(-)
E.E DRIVE(+)
E.E CONT(-)
E.E CONT(+)
CN861
Q861 AGC SWITCH
TP861
IA-1 BOARD ⑨
4Vp-p
IC731
SYNC GENERATOR
X731, D731 17.7MHz VXO
Q732 BUFFER
Q731 WEIGHT PULSE
CT731 PLL
X721, Q721,722 28.375MHz OSC
CT721 FREQUENCY
4FSC OUT
4FSC IN
A OUT
MODE
BLK
BF
SYNC
LALT
4FSC
CL
HD
FLD
VD
VDD2
OSC
1/2
CLP 3
XDL 1
XDL 2
SH 1
SH 2
CLP 2
VAA
ID
H BLK
②3.2Vp-p
⑪4.4Vp-p
⑫4.2Vp-p
DT-61 BOARD (HIC701) ②,⑪,⑫
4Vp-p
(HIC701) ①
RV005 RED OFFSET
RV003 GAMMA
RV002 WHITE CLIP
RV001 PEDESTAL
OFFSET
MPX
BLK
WHITE CLIP
PEDESTAL
RB DET
G DET
VAA
Q001-003
TP752
IRIS DET
AGC DET
AGC CONT
B CONT
R CONT
CN702
VD HD DIGITAL TITLE (VC-48)
VD SYSTEM CONTROL (SS-86)
0.5Vp-p
0.50Vp-p
0.48Vp-p
(HIC715) ㉖
TP783
TP781
MX-2 BOARD
(See page 69.)
VC-50 BOARD (1/2)
W781
R CONT
B CONT
IC822
1H DELAY
OUTPUT S/H TIMING
CCD CLOCK DRIVER
AUTO BIAS
PEDESTAL CLAMP
VGG
1H DELAY
OUT PUT
Q824 BUFFER
Q827 BUFFER
Q825 BUFFER
Q826 BUFFER
Q823 9V REG
12V
9V
VDD
IC781
9V REG
IC 781 K
IC 781 REF
TP791
TP788
TP783
TP781
TP782
TP787
TP784
TP785
TP786
RB 0
G 0
G#
RB#
IC821
MATRIX
RV821 G1 GAIN
RV822 RB1 GAIN
RV823 G2 GAIN
RV824 RB2 GAIN
CLP
AMP
S/H
DC AJ
GC
COMP
DLDC
MPX
APERTURE COMPENSATION
YH MATRIX
YL MATRIX
CHROMA MATRIX
S/H: SAMPLING HOLD
CLP: CLAMP
GC: GAIN CONTROL
YH
YL-YH
R-Y
B-Y
RV825 MPX DC
RV827 B-Y GAIN
RV782 R-Y MIX
RV781 B-Y MIX
R-Y MIX
B-Y MIX
Q831 BUFFER
Q829 BUFFER
Q833 0.7MHz LPF
Q832 BUFFER
FL781 4.77MHz LPF
W782
TP782
0.4Vp-p
MX-2 BOARD (HIC781) ㉑
MX-2 BOARD (HIC781) ⑳
MX-2 BOARD (HIC781) ㉒
MX-2 BOARD (HIC781) ⑲
MX-2 BOARD (HIC781) ⑯
0.2Vp-p
0.4Vp-p
0.38Vp-p
0.26Vp-p
CLP 2
B-Y
R-Y
DIGITAL TITLE (VC-48)
TP786,787,788
TP784,785
0.6Vp-p
1Vp-p
IC801 ⑳
IC801 ⑱
IC801 ⑪
1.44Vp-p
0.4Vp-p
IC801
ENCODER
DL801 0.18μSEC DELAY
RV801 APL
RV802 APS
RV809 YG
Q801,802 SYNC TITLE MIX
Y MIX
Y BLK
CLAMP
APERTURE CONTROL
YGC
BLK
PEDESTAL
WHITE CLIP
MOD
FADER
CHROMA
BGC
BURST
1/4
GATE
RV803 CB90°
RV804 CB 0°
RV806 HUE
RV805 BURST GAIN
RV808 CHROMA GAIN
BPF
TP802
SYNC
BLK
LLA
LALT
BF
4FSC
BL

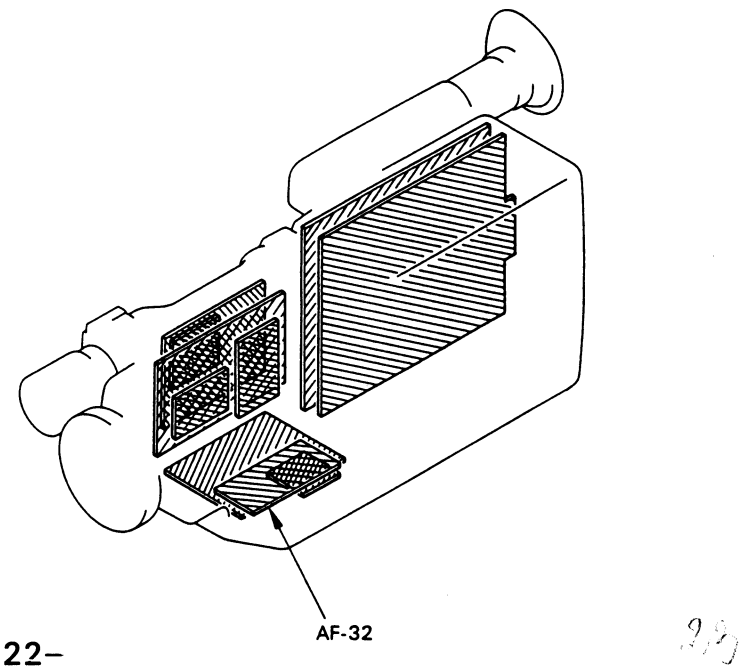


VC-51 BOARD
(See page 71.)
IA-1 BOARD
RV722 IRIS
IRIS DET
Q726,727 AMP
Q728,729 CLAMP
Q730,732 WEIGHT
LPF
IC721
E.E. DRIVE(-)
E.E. DRIVE(+)
E.E. CONT(-)
E.E. CONT(+)
RV721 AGC
AGC DET
Q721,722 AMP
Q723,724 CLAMP
Q731 WEIGHT
Q725 DET
LPF
Q733 LED DRIVE
LLA
RV723 LLA
CLP 3
WEIGHT
C+
AGC CONT
Q861 AGC SWITCH
TP861
4Vp-p
IA-1 BOARD ⑨
CN861
IRIS MOTOR
M
BL
2H
0.6Vp-p
TP786,787,788
H
TP784,785
TP791
ID
IC822
1H DELAY
SH 2
SH 1
XDL 1
XDL 2
CLP 2
OUTPUT S/H TIMING
CCD CLOCK DRIVER
AUTO BIAS
PEDESTAL CLAMP
VGG
1H DELAY
OUT PUT
Q823 9V REG
VDD
9V
12V
IC781
9V REG
IC 781 K
IC 781 REF
Q824 BUFFER
Q827 BUFFER
Q825 BUFFER
Q826 BUFFER
RB1
G1
TP787
TP784
RB 0
G 0
RV821 G1 GAIN
RV822 RB1 GAIN
RV823 G2 GAIN
RV824 RB2 GAIN
IC821
MATRIX
G#
RB#
CLP
AMP
S/H
DC AJ
GC
CLP2
SH2
SH1
G2
RB2
TP785
TP786
DLDC
COMP
RV825 MPX DC
MPX
G-B
G-R
ID
GO G1 G2
RBO RB1
YH MATRIX
V APERTURE COMPENSATION
YL MATRIX
CHROMA MATRIX
S/H SAMPLING HOLD
CLP CLAMP
GC GAIN CONTROL
R-Y
B-Y
YH
YL
YL-YH
RV827 B-Y GAIN
0.2Vp-p
MX-2 BOARD (HIC781) ⑲
Q831 BUFFER
Q829 BUFFER
Q833 0.7MHz LPF
Q832 BUFFER
W782
R-Y MIX
B-Y MIX
0.4Vp-p
TP782
MX-2 BOARD
FL781 4.77MHz LPF
0.44Vp-p
MX-2 BOARD (HIC781) ㉑
MX-2 BOARD (HIC781) ⑳
0.38Vp-p
MX-2 BOARD (HIC781) ㉒
0.26Vp-p
MX-2 BOARD (HIC781) ⑯
(See page 69.)
VC-50 BOARD(1/2)
SYNC
BLK
LALT
BF
CLP 2
B-Y
R-Y
DIGITAL TITLE (VC-48)
IC801 ⑳
0.44Vp-p
LLA
0.4Vp-p
IC801 ⑱
DL801 0.18μSEC DELAY
IC801
ENCODER
RV801 APL
RV802 APS
RV809 YG
APERTURE CONTROL
YGC
BLK
PEDESTAL
WHITE CLIP
Y BLK
WC
CLP3
CLAMP
MOD
FADER
CHROMA
BURST
BGC
RV803 CB90°
RV804 CB0°
RV806 HUE
4FSC
1/4
GATE
RV805 BURST GAIN
TP802
L801 BPF
RV808 CHROMA GAIN
Q808,809 CHROMA AMP
IC801 ⑪
IC801 ㊱
Q801,802 SYNC TITLE MIX
Q803 SYNC TIP CLAMP
Q804-807 WHITE CLIP
RV810 WHITE CLIP
Y MIX
Y OUT
C OUT
W782
DIGITAL TITLE (VC-48)
VIDEO (VA-41)
CN781
VC-50 BOARD(1/2)
(See page 69.)
Y A/D OUT
Y MIX
Y BLK
RV807 PEDESTAL

3-4. AUTO FOCUS BLOCK DIAGRAM

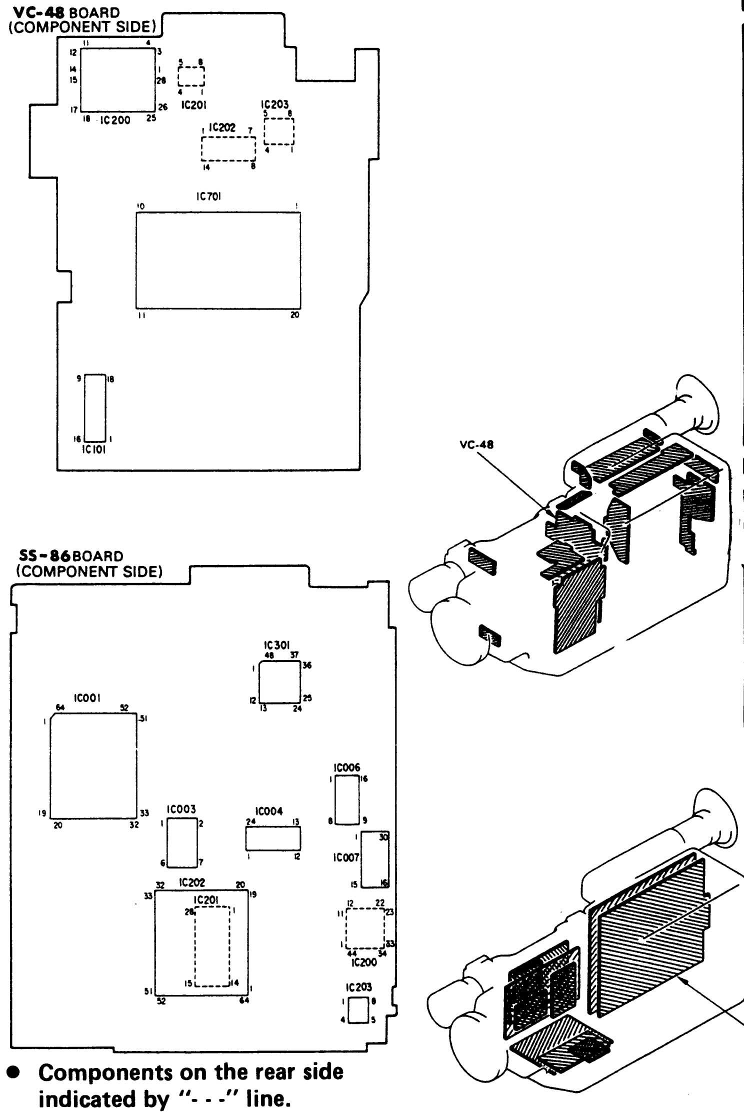
- ( ) near the board name indicates the schematic diagram page.


AF - 32 BOARD (See page 77.)
IC4
CCD FOCUS SENSER
VDD
V OUT
AGC/V REF
ϕT
ϕR
ϕ1
ϕ3
CCD FOCUS SENSOR
CN1
VDD
V OUT
AGC/V REF
ϕT
ϕT
IC001
INTERFACE
V IN
AGC/V REF
ϕT
ϕR
ϕ1
ϕ3
M6
REF OUT
REF TRIM
M5
VDD
O/S
NB0/MUX1
NB3/MUX4
OSC
BUS CON
ZOOM POTENTION UNIT
WIDE
TELE
ZOOM POTENTIAL
VDD
CN4
VDD
VR1
REF TRIM
VR2
$\overline{XP}$
COMPENTION
IC002
AUTO FOCUS CPU
P10
P13
TO
$\overline{INT}$
P20
VDD
VCC
$\overline{RESET}$
DB 0
DB 3
DB 6
DB 7
B FOCUS
F FOCUS
AF MTR
XTAL1
XTAL 2
X1 6MHz
C3
RESET
D-A CONVERTER
VR3
F RING SPEED
IC003
AUTO FOCUS MOTOR DRIVE
V REG
5.2V REG
VCC1
VCC 2
Q1, 2
VOLTAGE LIMITER
+IN
MOTOR CONTROL AMP
FORWARD/ REVERSE SWITCH
MB
MC
ϕB
ϕC
CN3
M
M905 FOCUS MOTOR
F FOCUS
B FOCUS
CN2
AF MTR
UNREG
CN2
DIGITAL TITLE (VC-48)
AF MTR
POWER (VC-48)
UN REG

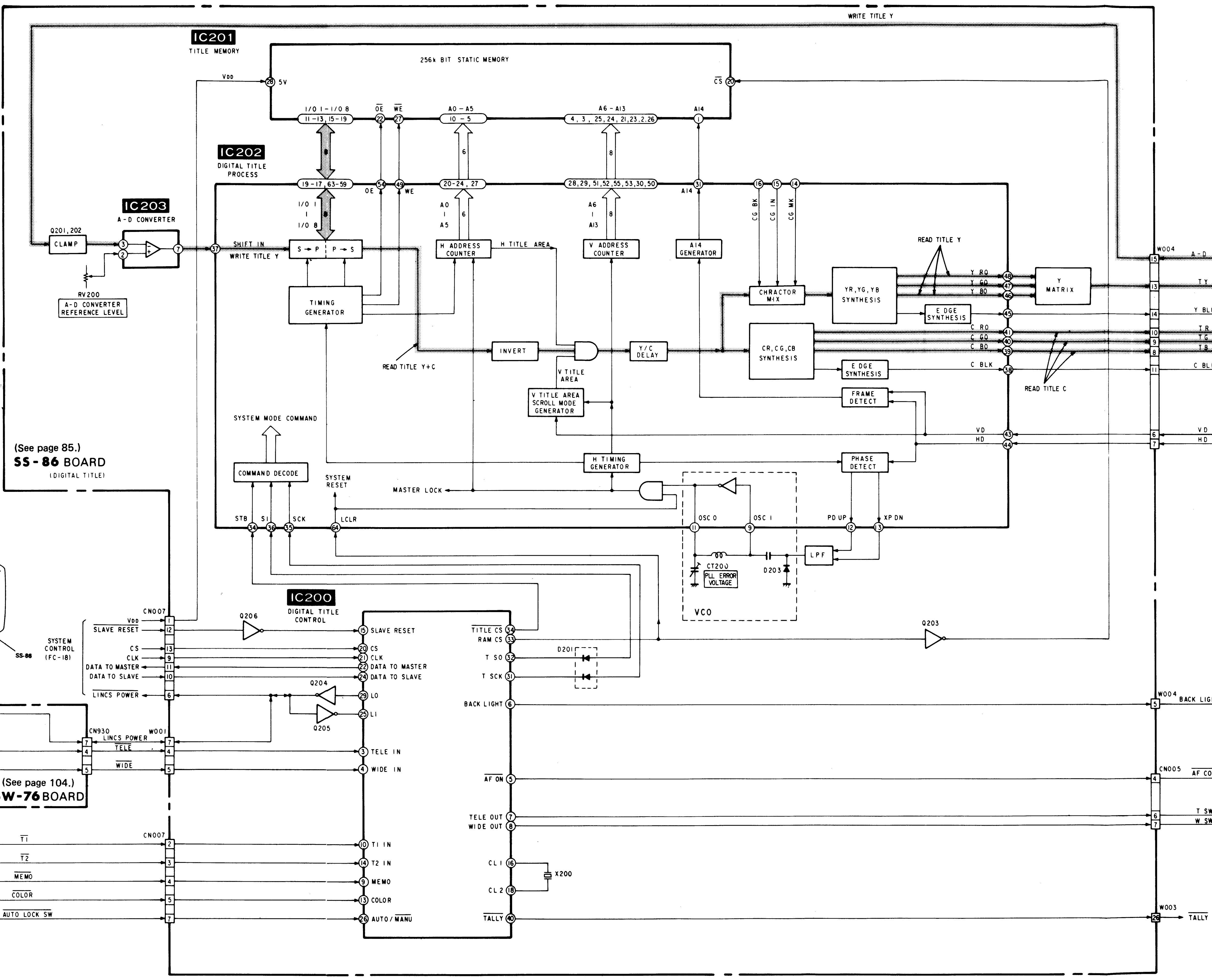


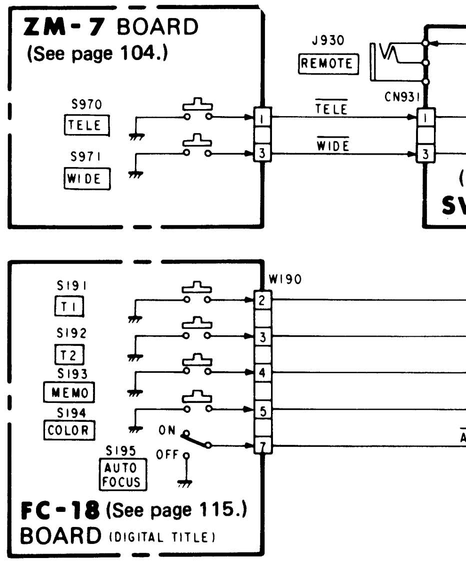
3-5. DIGITAL TITLER BLOCK DIAGRAM

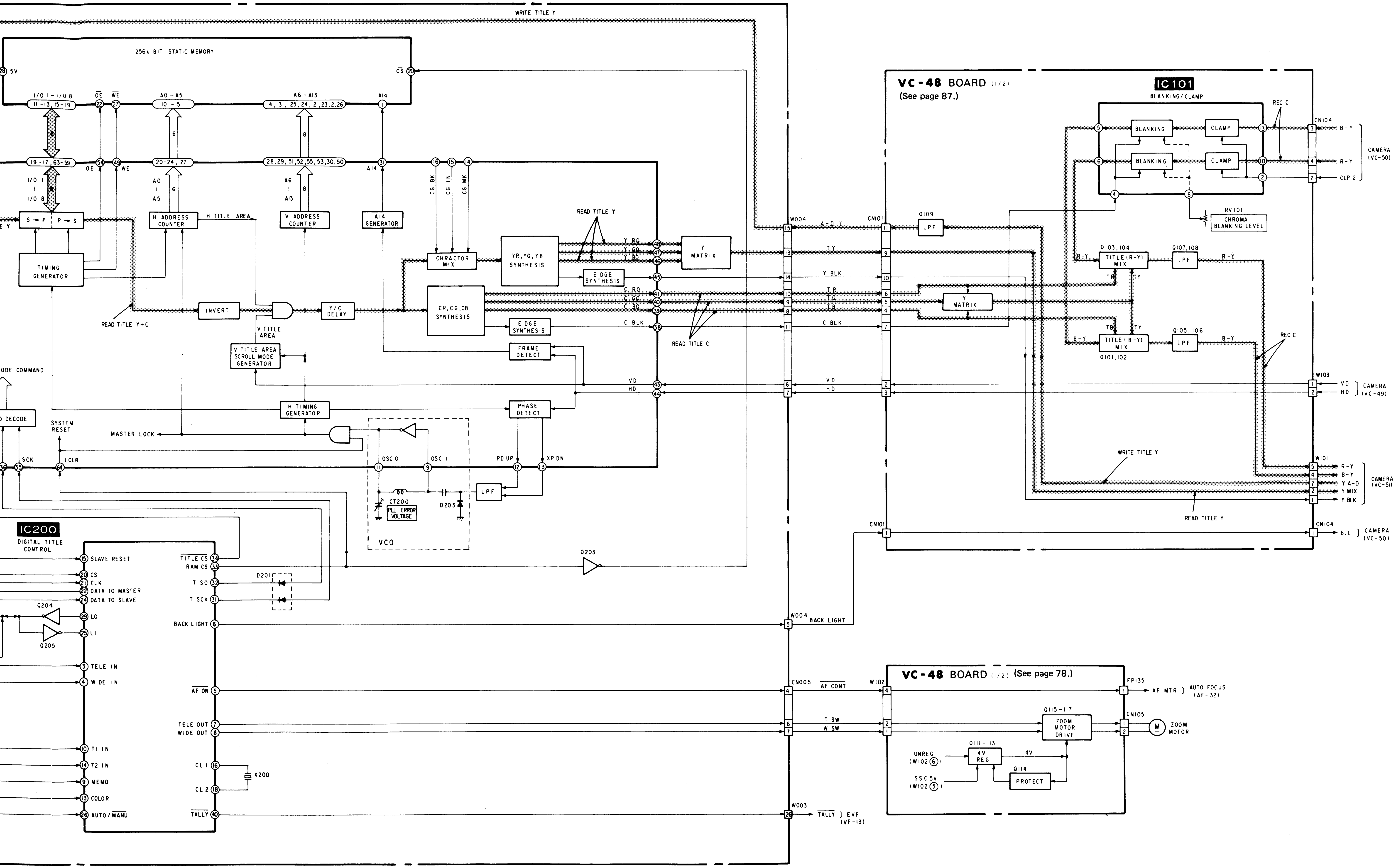
- ( ) near the board name indicates the schematic diagram page.


VC-48 BOARD
(COMPONENT SIDE)
IC200
IC201
IC202
IC203
IC701
IC101
VC-48
SS-86BOARD
(COMPONENT SIDE)
IC301
IC001
IC003
IC004
IC006
IC007
IC202
IC201
IC200
IC203

- Components on the rear side indicated by "- - -" line.

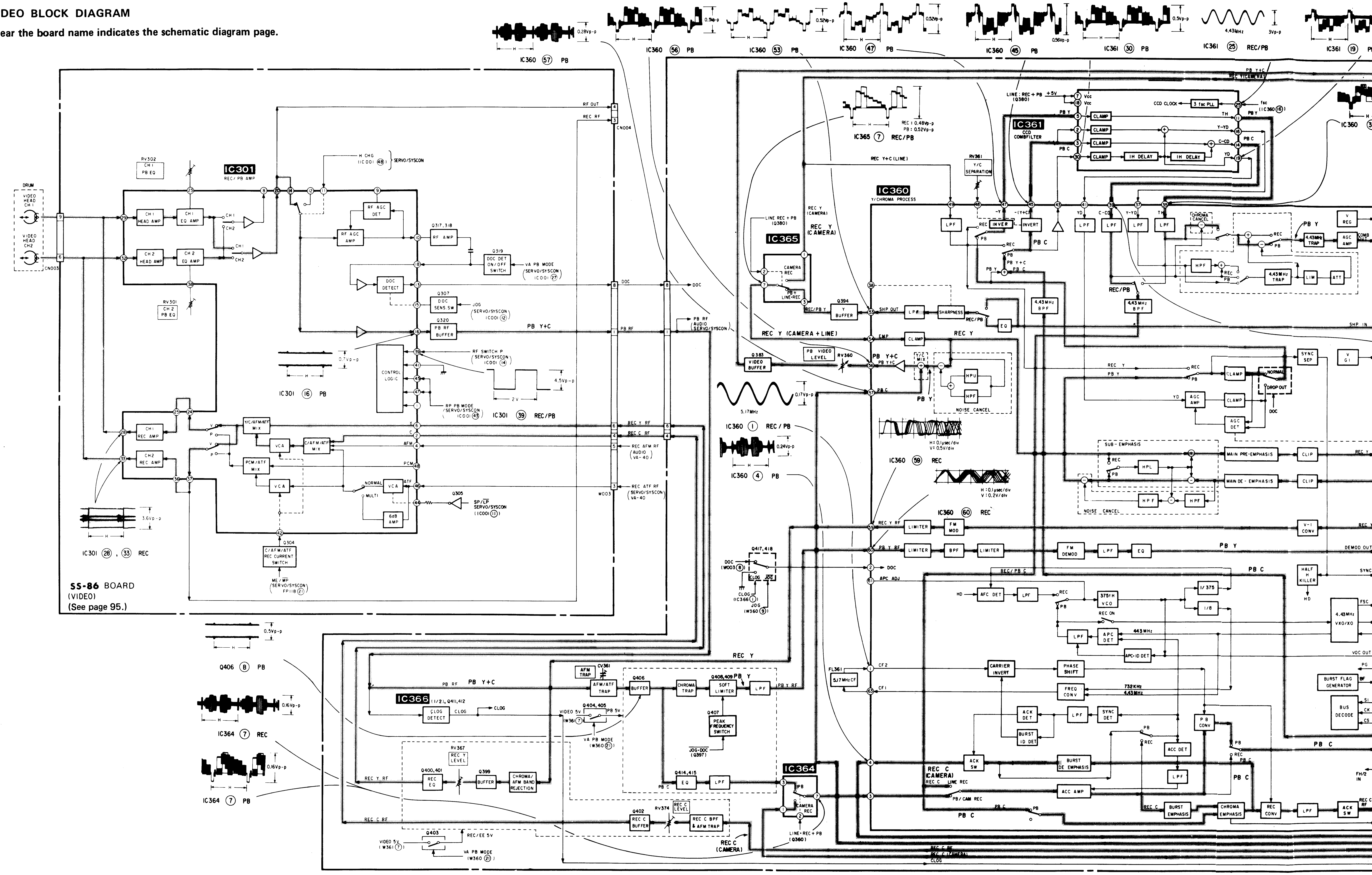

WRITE TITLE Y
IC201
TITLE MEMORY
256k BIT STATIC MEMORY
VDD
28 5V
CS 20
I/O 1 - I/O 8
11 - 13, 15 - 19
OE 22
WE 27
A0 - A5
10 - 5
A6 - A13
4, 3, 25, 24, 21, 23, 2, 26
A14
1
IC202
DIGITAL TITLE PROCESS
19 - 17, 63 - 59
54 OE
49 WE
20 - 24, 27
28, 29, 51, 52, 55, 53, 30, 50
31 A14
16 CG BK
15 CG IN
14 CG MK
I/O 1 I I/O 8
A0 I A5
A6 I A13
6
8
IC203
A-D CONVERTER
Q201, 202
CLAMP
RV200
A-D CONVERTER REFERENCE LEVEL
37 SHIFT IN
WRITE TITLE Y
S → P
P → S
TIMING GENERATOR
H ADDRESS COUNTER
H TITLE AREA
V ADDRESS COUNTER
A14 GENERATOR
READ TITLE Y
CHRACTOR MIX
YR, YG, YB SYNTHESIS
Y RO 48
Y GO 47
Y BO 46
Y MATRIX
E DGE SYNTHESIS
45
READ TITLE Y+C
INVERT
Y/C DELAY
CR, CG, CB SYNTHESIS
C RO 41
C GO 40
C BO 39
E DGE SYNTHESIS
C BLK 38
READ TITLE C
V TITLE AREA
V TITLE AREA SCROLL MODE GENERATOR
FRAME DETECT
VD 43
HD 44
SYSTEM MODE COMMAND
COMMAND DECODE
SYSTEM RESET
H TIMING GENERATOR
PHASE DETECT
MASTER LOCK
STB 34
SI 36
SCK 35
LCLR 64
OSC O 11
OSC I 9
PD UP 12
XP DN 13
LPF
CT200
PLL ERROR VOLTAGE
D203
VCO
W004
15 A-D
13 TY
14 Y BL
10 TR
9 TG
8 TB
11 C BL
6 VD
7 HD
(See page 85.)
SS-86 BOARD
(DIGITAL TITLE)
IC200
DIGITAL TITLE CONTROL
Q206
CN007
VDD 1
SLAVE RESET 12
CS 13
CLK 9
DATA TO MASTER 11
DATA TO SLAVE 10
LINCS POWER 6
SYSTEM CONTROL (FC-18)
15 SLAVE RESET
20 CS
21 CLK
22 DATA TO MASTER
24 DATA TO SLAVE
29 LO
25 LI
Q204
Q205
3 TELE IN
4 WIDE IN
TITLE CS 34
RAM CS 33
T SO 32
T SCK 31
D201
Q203
BACK LIGHT 6
W004 5 BACK LIG
AF ON 5
CN005 4 AF CO
TELE OUT 7
WIDE OUT 8
6 T SW
7 W SW
CL1 16
CL2 18
X200
TALLY 40
W003 26 TALLY
J930
REMOTE
CN930
CN931
W001
LINCS POWER 7
TELE 4
WIDE 5
(See page 104.)
SW-76 BOARD
CN007
T1 2
T2 3
MEMO 4
COLOR 5
AUTO LOCK SW 7
10 T1 IN
14 T2 IN
9 MEMO
13 COLOR
26 AUTO/MANU
SS-86

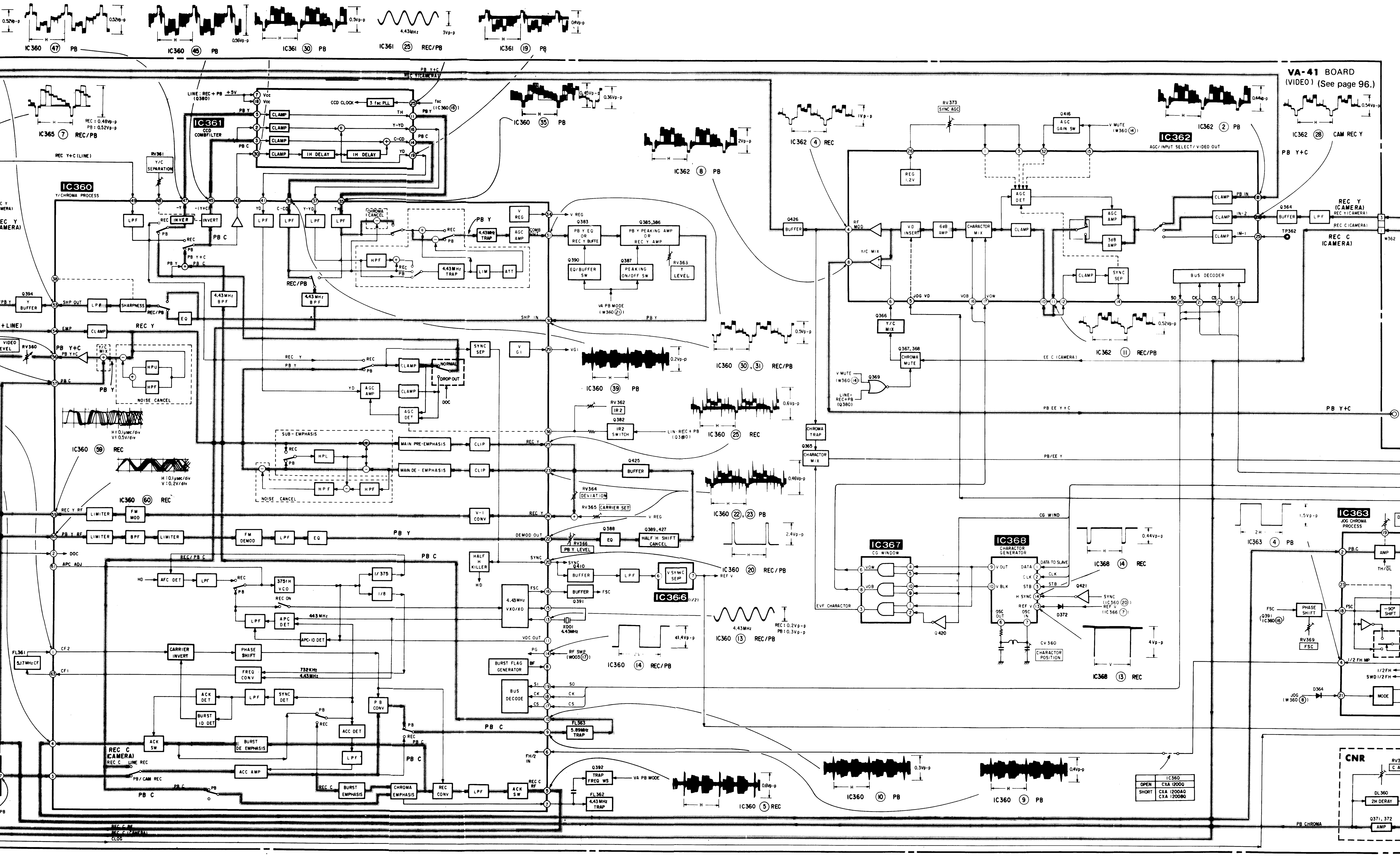

ZM-7 BOARD
(See page 104.)
S970
TELE
S971
WIDE
1
3
TELE
WIDE
W190
S191
T1
S192
T2
S193
MEMO
S194
COLOR
S195
AUTO FOCUS
ON
OFF
2
3
4
5
7
FC-18 (See page 115.)
BOARD (DIGITAL TITLE)

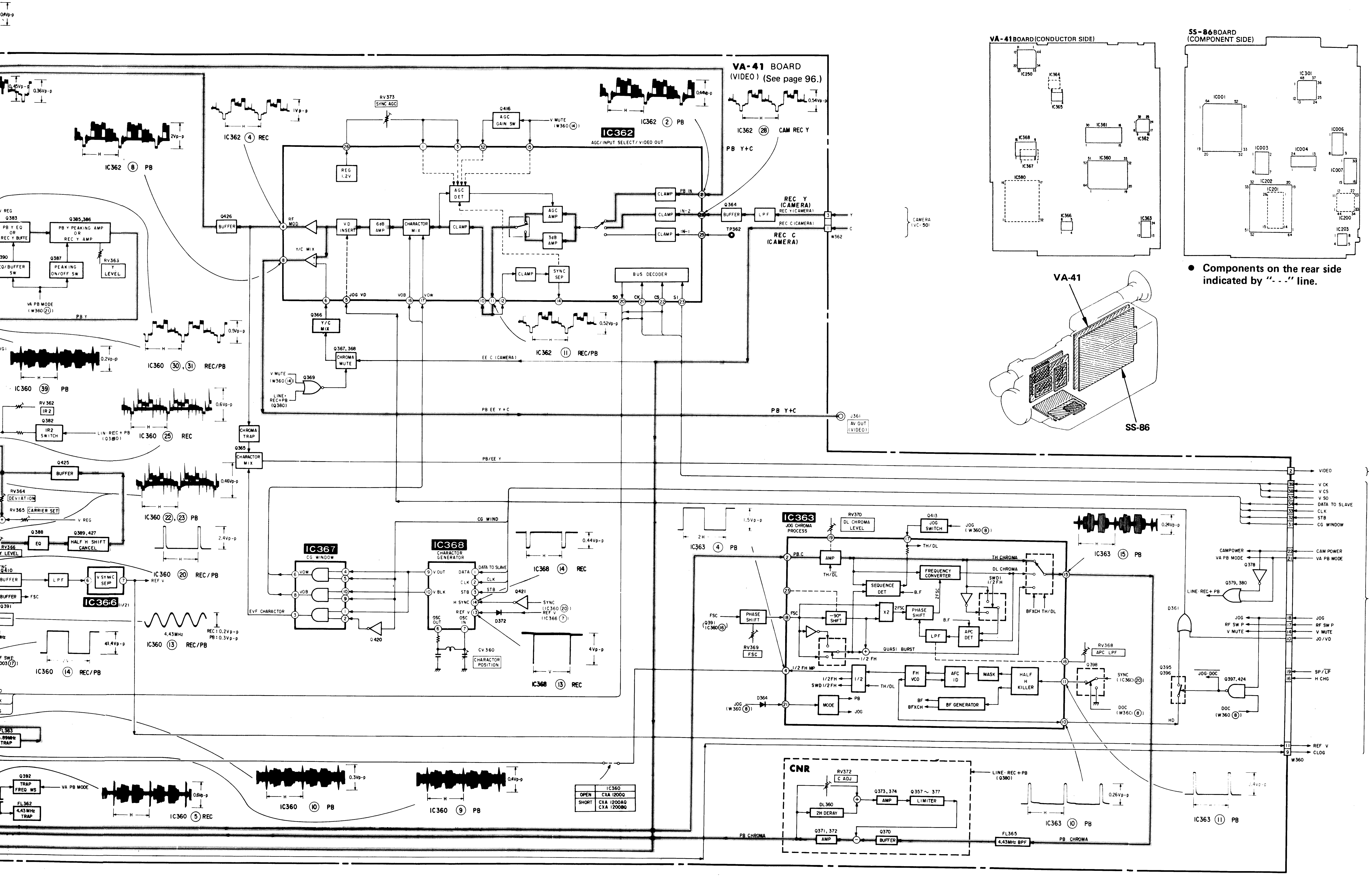

WRITE TITLE Y
256k BIT STATIC MEMORY
5V
CS
I/O 1 - I/O 8
11 - 13, 15 - 19
OE
WE
A0 - A5
10 - 5
A6 - A13
4, 3, 25, 24, 21, 23, 2, 26
A14
19 - 17, 63 - 59
20 - 24, 27
28, 29, 51, 52, 55, 53, 30, 50
I/O 1
I/O 8
A0
A5
A6
A13
S → P
P → S
H ADDRESS COUNTER
H TITLE AREA
V ADDRESS COUNTER
A14 GENERATOR
CG BK
CG IN
CG MK
READ TITLE Y
TIMING GENERATOR
CHRACTOR MIX
YR, YG, YB SYNTHESIS
Y RO
Y GO
Y BO
Y MATRIX
EDGE SYNTHESIS
INVERT
Y/C DELAY
CR, CG, CB SYNTHESIS
C RO
C GO
C BO
C BLK
READ TITLE Y+C
READ TITLE C
V TITLE AREA
V TITLE AREA SCROLL MODE GENERATOR
FRAME DETECT
VD
HD
MODE COMMAND
DECODE
SYSTEM RESET
MASTER LOCK
H TIMING GENERATOR
PHASE DETECT
SCK
LCLR
OSC O
OSC I
PD UP
XP DN
LPF
CT200
PLL ERROR VOLTAGE
D203
VCO
IC200
DIGITAL TITLE CONTROL
SLAVE RESET
CS
CLK
DATA TO MASTER
DATA TO SLAVE
Q204
LO
LI
Q205
TELE IN
WIDE IN
T1 IN
T2 IN
MEMO
COLOR
AUTO/MANU
TITLE CS
RAM CS
T SO
T SCK
D201
Q203
BACK LIGHT
AF ON
TELE OUT
WIDE OUT
CL 1
CL 2
X200
TALLY
W004
A - D Y
T Y
Y BLK
T R
T G
T B
C BLK
CN101
W004
BACK LIGHT
CN005
AF CONT
T SW
W SW
W003
TALLY) EVF (VF-13)
VC-48 BOARD (1/2)
(See page 87.)
IC101
BLANKING/CLAMP
BLANKING
CLAMP
REC C
CN104
B - Y
R - Y
CLP 2
CAMERA (VC-50)
Q109
LPF
RV101
CHROMA BLANKING LEVEL
Q103, 104
TITLE (R-Y) MIX
Q107, 108
Y MATRIX
TITLE (B-Y) MIX
Q101, 102
Q105, 106
W103
VD
HD
CAMERA (VC-49)
WRITE TITLE Y
W101
R-Y
B-Y
Y A-D
Y MIX
Y BLK
CAMERA (VC-51)
READ TITLE Y
CN104
B.L) CAMERA (VC-50)
VC-48 BOARD (1/2) (See page 78.)
W102
FP135
AF MTR) AUTO FOCUS (AF-32)
Q115 - 117
ZOOM MOTOR DRIVE
CN105
M
ZOOM MOTOR
Q111 - 113
UNREG (W102 ⑥)
4V REG
4V
SSC 5V (W102 ⑤)
Q114
PROTECT

3-6. VIDEO BLOCK DIAGRAM

- ( ) near the board name indicates the schematic diagram page.


IC360 (57) PB
IC360 (56) PB
IC360 (53) PB
IC360 (47) PB
IC360 (45) PB
IC361 (30) PB
IC361 (25) REC/PB
IC361 (19) PB
DRUM
VIDEO HEAD CH1
VIDEO HEAD CH2
CN003
RV302 CH1 PB EQ
IC301 REC/PB AMP
CH1 HEAD AMP
CH1 EQ AMP
CH2 HEAD AMP
CH2 EQ AMP
RV301 CH2 PB EQ
H CHG (IC001 (48)) SERVO/SYSCON
RF AGC DET
RF AGC AMP
Q317,318 RF AMP
Q319 DOC DET ON/OFF SWITCH
VA PB MODE (SERVO/SYSCON IC001 (27))
DOC DETECT
Q307 DOC SENS SW
JOG (SERVO/SYSCON IC001 (12))
Q320 PB RF BUFFER
PB Y+C
CONTROL LOGIC
RF SWITCH P (SERVO/SYSCON IC001 (14))
RP PB MODE (SERVO/SYSCON IC001 (43))
IC301 (16) PB
IC301 (39) REC/PB
0.7Vp-p
4.5Vp-p
CH1 REC AMP
CH2 REC AMP
Y/C/AFM/ATF MIX
VCA
C/AFM/ATF MIX
PCM/ATF MIX
NORMAL
MULTI
6dB AMP
Q305 SP/LP SERVO/SYSCON (IC001 (11))
Q304 C/AFM/ATF REC CURRENT SWITCH
ME/MP (SERVO/SYSCON FP118 (2))
IC301 (28), (33) REC
3.6Vp-p
SS-86 BOARD (VIDEO) (See page 95.)
RF OUT
REC RF
CN004
DOC
PB RF
REC Y RF
REC C RF
AFM
PCM
ATF
REC AFM RF (AUDIO VA-40)
REC ATF RF (SERVO/SYSCON VA-40)
W003
PB RF (AUDIO SERVO/SYSCON)
Q406 (8) PB
0.5Vp-p
IC364 (7) REC
0.16Vp-p
IC364 (7) PB
IC366 (1/2), Q411,412
CLOG DETECT
CLOG
AFM TRAP
CV361
AFM/ATF TRAP
Q406 BUFFER
CHROMA TRAP
Q408,409 SOFT LIMITER
PB Y
LPF
PB Y RF
VIDEO 5V (W361 (7))
Q404,405
PB 5V
VA PB MODE (W360 (21))
Q407 PEAK FREQUENCY SWITCH
JOG-DOC (Q397)
Q414,415 EQ
PB C
RV367 REC Y LEVEL
Q400,401 REC EQ
Q399 BUFFER
CHROMA/AFM BAND REJECTION
Q402 REC C BUFFER
RV374 REC C LEVEL
REC C BPF & AFM TRAP
Q403
REC/EE 5V
VIDEO 5V (W361 (7))
VA PB MODE (W360 (21))
REC Y
IC364
CAMERA REC
LINE REC + PB (Q360)
REC C (CAMERA)
IC365 (7) REC/PB
REC: 0.48Vp-p PB: 0.52Vp-p
LINE: REC + PB +5V (Q380)
IC361 CCD COMBFILTER
CCD CLOCK
3 fsc PLL
fsc (IC360 (6))
CLAMP
1H DELAY
Y-YD
C-CD
YD
REC Y+C (LINE)
RV361 Y/C SEPARATION
IC360 Y/CHROMA PROCESS
INVERT
CHROMA CANCEL
4.43MHz TRAP
AGC AMP
V REG
HPF
LIM
ATT
4.43MHz BPF
REC/PB
LINE REC + PB (Q380)
REC Y (CAMERA)
IC365
Q394 Y BUFFER
SHP OUT
SHARPNESS
EQ
EMP
CLAMP
REC Y (CAMERA + LINE)
Q383 VIDEO BUFFER
PB VIDEO LEVEL
RV360
Y/C MIX
NOISE CANCEL
HPU
HPF
SYNC SEP
NORMAL
DROP OUT
AGC DET
SUB-EMPHASIS
HPL
MAIN PRE-EMPHASIS
MAIN DE-EMPHASIS
CLIP
0.17Vp-p
5.17MHz
IC360 (1) REC/PB
IC360 (4) PB
0.24Vp-p
H: 0.1μsec/div V: 0.5V/div
IC360 (59) REC
H: 0.1μsec/div V: 0.2V/div
IC360 (60) REC
LIMITER
FM MOD
V-I CONV
BPF
FM DEMOD
DEMOD OUT
Q417,418
DOC (W003 (8))
CLOG
JOG
CLOG (IC366 (1))
JOG (W360 (9))
APC ADJ
AFC DET
3751H VCO
1/375
1/8
REC ON
APC DET
4.43MHz
APC-ID DET
HALF H KILLER
4.43MHz VXO/XO
VOC OUT
FL361 5.17MHz CF
CF2
CF1
CARRIER INVERT
PHASE SHIFT
FREQ CONV
732KHz
4.43MHz
ACK DET
SYNC DET
BURST ID DET
PB CONV
ACC DET
BURST FLAG GENERATOR
BUS DECODE
ACK SW
BURST DE-EMPHASIS
ACC AMP
REC C (CAMERA)
REC C LINE REC
PB/CAM REC
BURST EMPHASIS
CHROMA EMPHASIS
REC CONV
ACK SW
FH/2 IN
REC C RF
REC C (CAMERA)
CLOG

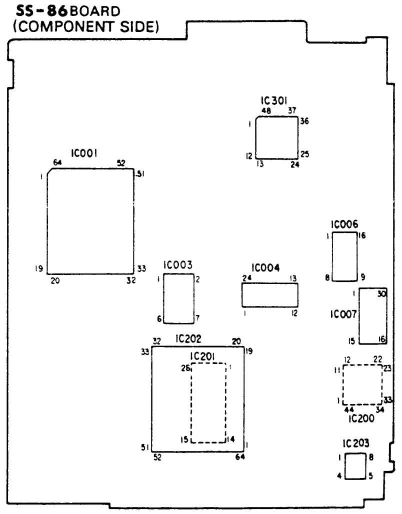

VA-41 BOARD
(VIDEO) (See page 96.)
IC360 Y/CHROMA PROCESS
IC361 CCD COMBFILTER
IC362 AGC/INPUT SELECT/VIDEO OUT
IC363 JOG CHROMA PROCESS
IC366 V SYNC SEP
IC367 CG WINDOW
IC368 CHARACTOR GENERATOR
IC360 (47) PB
IC360 (45) PB
IC361 (30) PB
IC361 (25) REC/PB
IC361 (19) PB
IC365 (7) REC/PB
IC360 (35) PB
IC362 (8) PB
IC362 (4) REC
IC362 (2) PB
IC362 (28) CAM REC Y
IC362 (11) REC/PB
IC360 (30),(31) REC/PB
IC360 (39) PB
IC360 (25) REC
IC360 (22),(23) PB
IC360 (20) REC/PB
IC360 (13) REC/PB
IC360 (14) REC/PB
IC360 (59) REC
IC360 (60) REC
IC360 (10) PB
IC360 (9) PB
IC360 (5) REC
IC363 (4) PB
IC368 (14) REC
IC368 (13) REC
CCD CLOCK
3 fsc PLL
CLAMP
1H DELAY
Y/C SEPARATION
RV361
LPF
INVER
INVERT
HPF
4.43MHz TRAP
LIM
ATT
CHROMA CANCEL
V REG
AGC AMP
COMB INPUT
PB Y EQ OR REC Y BUFFE
PB Y PEAKING AMP OR REC Y AMP
EQ/BUFFER SW
PEAKING ON/OFF SW
RV363 Y LEVEL
VA PB MODE (W360 (21))
4.43MHz BPF
SHARPNESS
EQ
Q394 Y BUFFER
SHP OUT
SHP IN
EMP
REC Y
PB Y+C
Y/C MIX
HPU
NOISE CANCEL
SYNC SEP
V GI
NORMAL
DROP OUT
DOC
AGC DET
SUB-EMPHASIS
HPL
MAIN PRE-EMPHASIS
MAIN DE-EMPHASIS
CLIP
Q425 BUFFER
RV362 IR2
Q382 IR2 SWITCH
LINE REC+PB (Q380)
RV364 DEVIATION
RV365 CARRIER SET
V-I CONV
FM MOD
LIMITER
BPF
FM DEMOD
DEMOD OUT
RV366 PB Y LEVEL
Q388 EQ
Q389, 427 HALF H SHIFT CANCEL
HALF H KILLER
AFC DET
375fH VCO
1/375
1/8
REC ON
APC DET
APC-ID DET
4.43MHz VXO/XO
X001 4.43MHz
VOC OUT
Q410 BUFFER
Q391 BUFFER
FSC
CARRIER INVERT
PHASE SHIFT
FREQ CONV
732KHz
4.43MHz
FL361 5.17MHz CF
CF2
CF1
ACK DET
BURST ID DET
ACK SW
BURST DE EMPHASIS
ACC DET
ACC AMP
PB CONV
BURST FLAG GENERATOR
BUS DECODE
FL363 5.89MHz TRAP
Q392 TRAP FREQ WS
FL362 4.43MHz TRAP
BURST EMPHASIS
CHROMA EMPHASIS
REC CONV
REC C (CAMERA)
REC C LINE REC
PB/CAM REC
PB C
REC C RF
REC C (CAMERA)
CLOG
RF SWP (W003 (17))
Q426 BUFFER
RF MOD
V D INSERT
6dB AMP
CHARACTOR MIX
AGC GAIN SW
Q416
RV373 SYNC AGC
REG 1.2V
V MUTE (W360 (14))
3dB AMP
SYNC SEP
BUS DECODER
Q364 BUFFER
REC Y (CAMERA)
REC C (CAMERA)
TP362
Q366 Y/C MIX
Q367, 368 CHROMA MUTE
Q369
EE C (CAMERA)
PB EE Y+C
Q365 CHARACTOR MIX
CHROMA TRAP
PB/EE Y
CG WIND
EVF CHARACTOR
JOG VD
Q420
Q421
D372
CV360 CHARACTOR POSITION
DATA TO SLAVE
PHASE SHIFT
RV369 FSC
-90° SHIFT
1/2 FH MP
1/2FH
SWD 1/2FH
JOG (W360 (8))
D364
MODE
AMP
TH/DL
CNR
DL360 2H DERAY
Q371, 372 AMP
PB CHROMA
IC360 OPEN CXA 1200Q SHORT CXA 1200AQ CXA 1200BQ
REC: 0.48Vp-p PB: 0.52Vp-p
H: 0.1μsec/div V: 0.5V/div
H: 0.1μsec/div V: 0.2V/div
REC: 0.2Vp-p PB: 0.3Vp-p

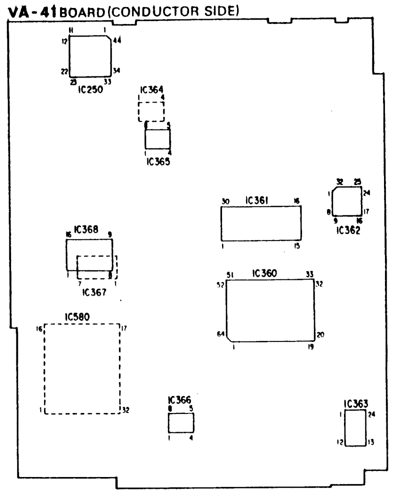

VA-41 BOARD
(VIDEO) (See page 96.)
IC362
AGC/INPUT SELECT/VIDEO OUT
IC363
JOG CHROMA PROCESS
IC367
CG WINDOW
IC368
CHARACTOR GENERATOR
IC366
V SYNC SEP
CNR
BUS DECODER
AGC DET
AGC AMP
3dB AMP
CLAMP
BUFFER
LPF
VD INSERT
6dB AMP
CHARACTOR MIX
SYNC SEP
Y/C MIX
CHROMA MUTE
CHROMA TRAP
PB Y EQ OR REC Y BUFFE
PB Y PEAKING AMP OR REC Y AMP
PEAKING ON/OFF SW
IR2 SWITCH
DEVIATION
CARRIER SET
HALF H SHIFT CANCEL
TRAP FREQ WS
4.43MHz TRAP
FREQUENCY CONVERTER
SEQUENCE DET
PHASE SHIFT
-90° SHIFT
APC DET
FH VCO
AFC ID
MASK
HALF H KILLER
BF GENERATOR
MODE
2H DERAY
LIMITER
4.43MHz BPF
PB Y+C
PB EE Y+C
PB/EE Y
CG WIND
EVF CHARACTOR
PB CHROMA
REC Y (CAMERA)
REC C (CAMERA)
CAMERA (VC-50)
AV OUT (VIDEO)
W362
W360
VIDEO
V CK
V CS
V SO
DATA TO SLAVE
CLK
STB
CG WINDOW
CAM POWER
VA PB MODE
JOG
RF SW P
V MUTE
JO/VD
SP/LP
H CHG
REF V
CLOG
EVF (VF-13)
SERVO / SYSCON (SS-86)
IC362 ④ REC
IC362 ② PB
IC362 ㉘ CAM REC Y
IC362 ⑧ PB
IC362 ⑪ REC/PB
IC360 ㉚,㉛ REC/PB
IC360 ㊴ PB
IC360 ㉕ REC
IC360 ㉒,㉓ PB
IC360 ⑳ REC/PB
IC360 ⑬ REC/PB
IC360 ⑭ REC/PB
IC360 ⑩ PB
IC360 ⑨ PB
IC360 ⑤ REC
IC368 ⑭ REC
IC368 ⑬ REC
IC363 ④ PB
IC363 ⑮ PB
IC363 ⑩ PB
IC363 ⑪ PB
OPEN
SHORT
IC360
CXA 1200Q
CXA 1200AQ
CXA 1200BQ
VA-41 BOARD (CONDUCTOR SIDE)
SS-86 BOARD (COMPONENT SIDE)
VA-41
SS-86

- Components on the rear side indicated by "- - -" line.

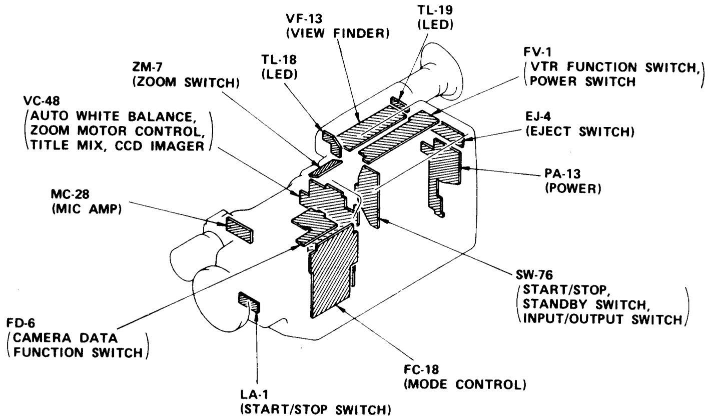
3-7. SERVO/SYSTEM CONTROL BLOCK DIAGRAM

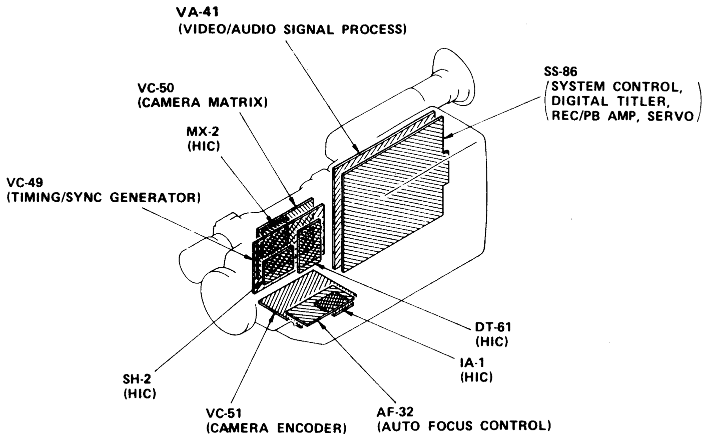
- ( ) near the board name indicates the schematic diagram page.

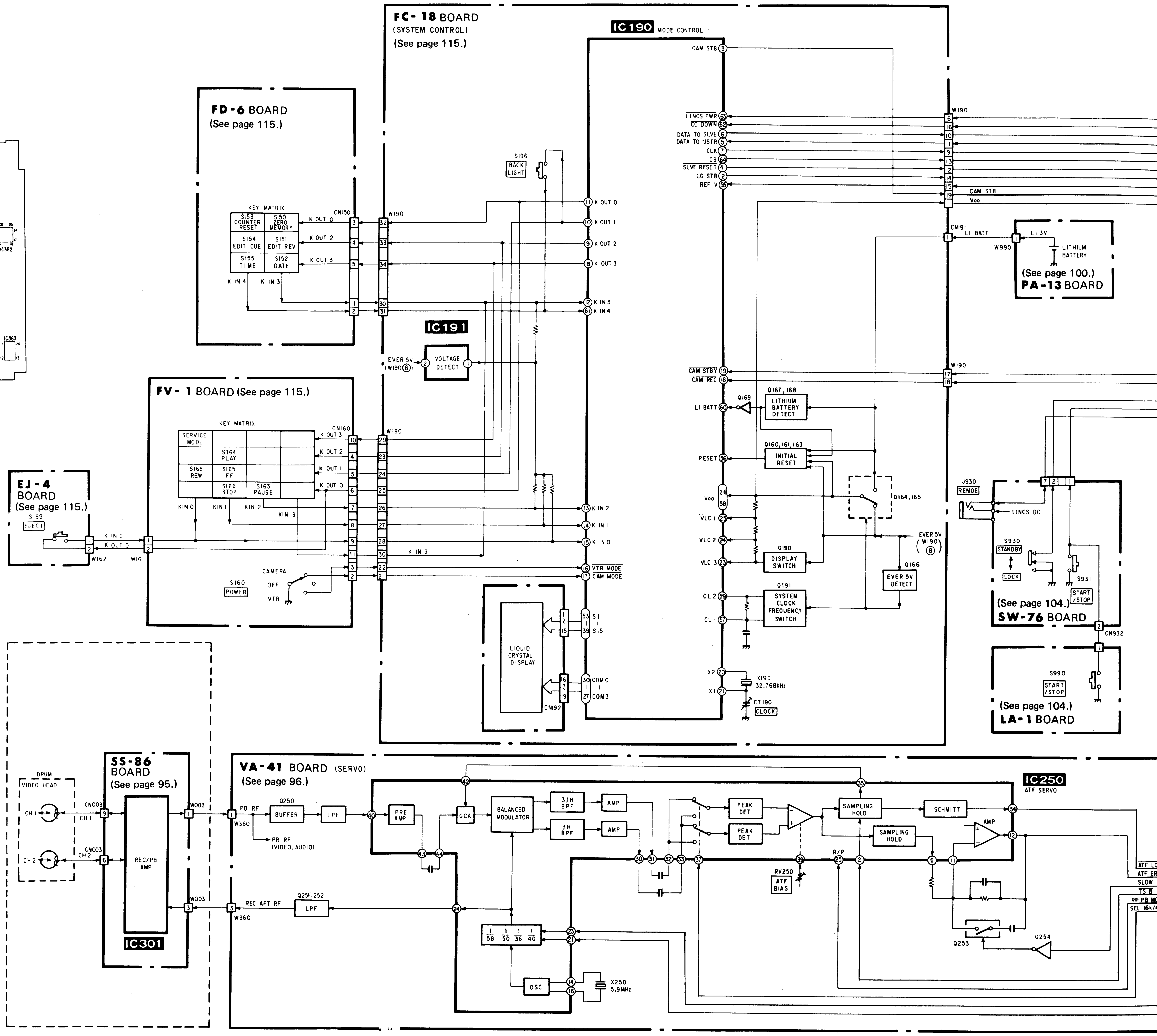

SS-86 BOARD
(COMPONENT SIDE)
IC301
IC001
IC003
IC004
IC006
IC007
IC202
IC201
IC200
IC203

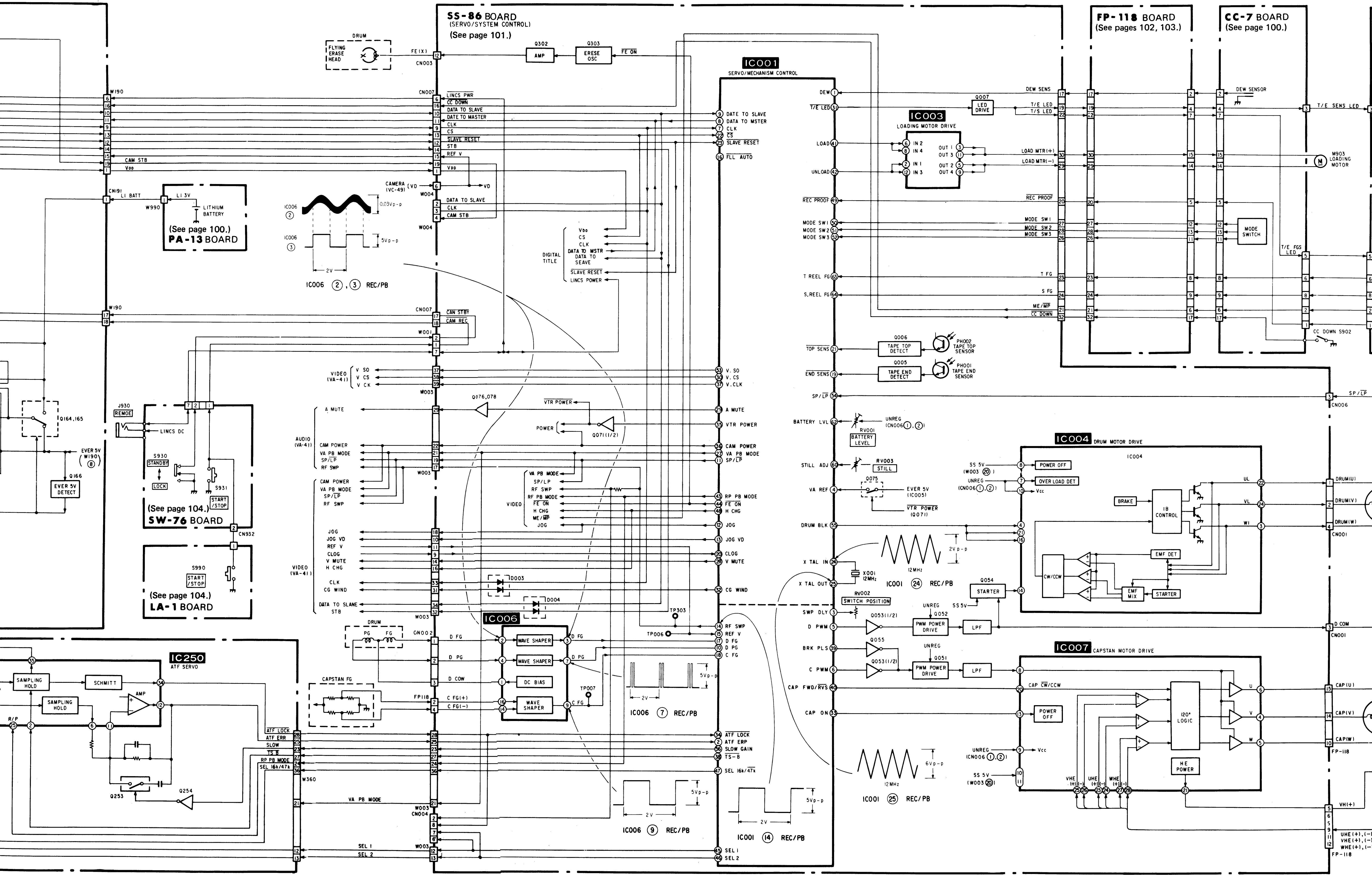

VA-41 BOARD (CONDUCTOR SIDE)
IC250
IC364
IC365
IC361
IC362
IC368
IC367
IC360
IC580
IC366
IC363

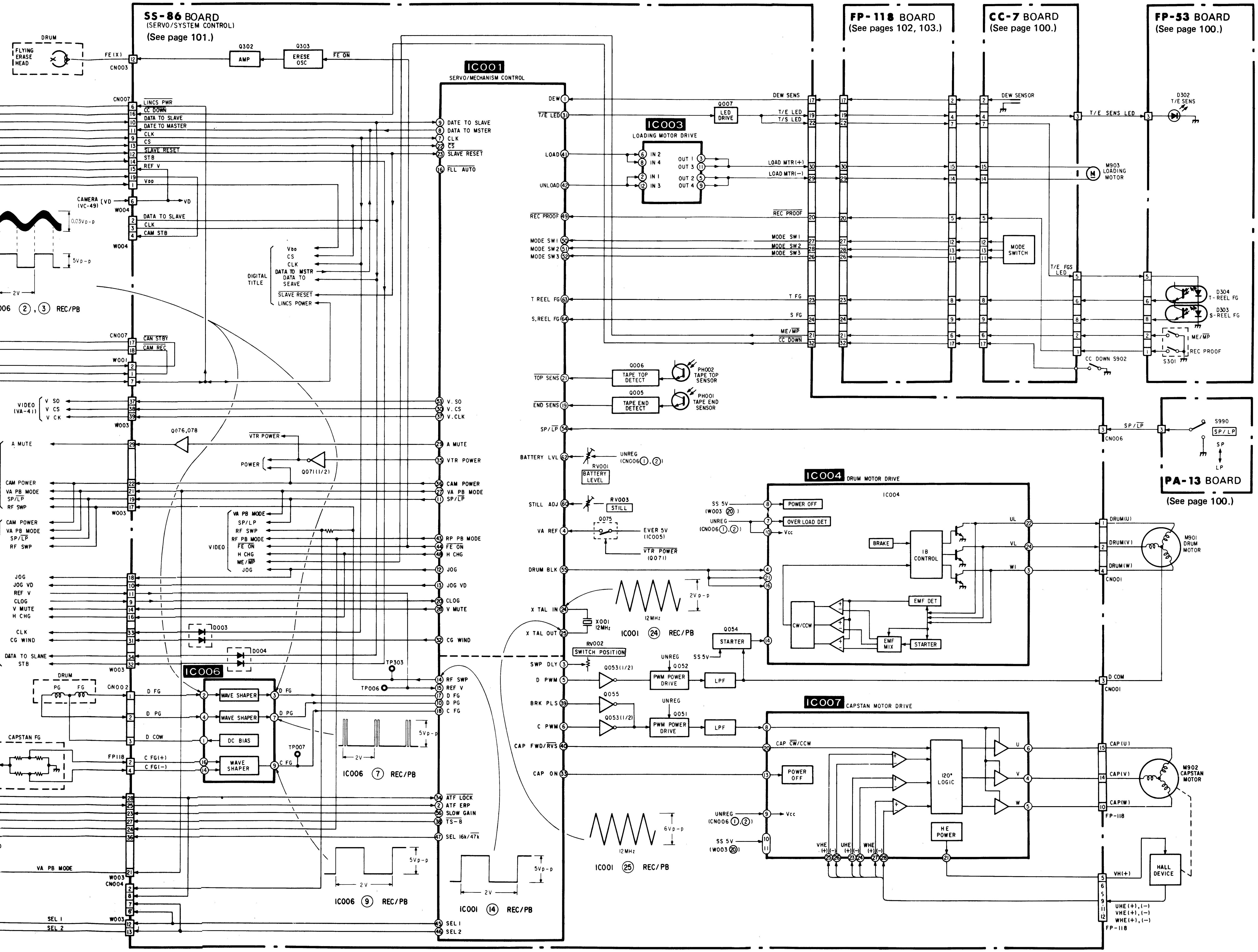
- Components on the rear side indicated by "- - -" line.


VF-13
(VIEW FINDER)
TL-19
(LED)
TL-18
(LED)
ZM-7
(ZOOM SWITCH)
VC-48
(AUTO WHITE BALANCE, ZOOM MOTOR CONTROL, TITLE MIX, CCD IMAGER)
MC-28
(MIC AMP)
FD-6
(CAMERA DATA FUNCTION SWITCH)
LA-1
(START/STOP SWITCH)
FC-18
(MODE CONTROL)
SW-76
(START/STOP, STANDBY SWITCH, INPUT/OUTPUT SWITCH)
PA-13
(POWER)
EJ-4
(EJECT SWITCH)
FV-1
(VTR FUNCTION SWITCH, POWER SWITCH)


VA-41
(VIDEO/AUDIO SIGNAL PROCESS)
VC-50
(CAMERA MATRIX)
MX-2
(HIC)
VC-49
(TIMING/SYNC GENERATOR)
SS-86
(SYSTEM CONTROL, DIGITAL TITLER, REC/PB AMP, SERVO)
DT-61
(HIC)
IA-1
(HIC)
SH-2
(HIC)
VC-51
(CAMERA ENCODER)
AF-32
(AUTO FOCUS CONTROL)


FC-18 BOARD
(SYSTEM CONTROL)
(See page 115.)
IC190 MODE CONTROL
CAM STB
LINCS PWR
CC DOWN
DATA TO SLVE
DATA TO MSTR
CLK
CS
SLVE RESET
CG STB
REF V
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K IN 3
K IN 4
S196 BACK LIGHT
IC191
EVER 5V (W190 8)
VOLTAGE DETECT
CAM STBY
CAM REC
LI BATT
Q169
Q167,168 LITHIUM BATTERY DETECT
Q160,161,163 INITIAL RESET
RESET
VDD
VLC 1
VLC 2
VLC 3
Q164,165
Q190 DISPLAY SWITCH
Q191 SYSTEM CLOCK FREQUENCY SWITCH
CL 2
CL 1
EVER 5V (W190 8)
Q166 EVER 5V DETECT
X2
X1
X190 32.768kHz
CT190 CLOCK
K IN 2
K IN 1
K IN 0
VTR MODE
CAM MODE
S1 … S15
COM 0 … COM 3
LIQUID CRYSTAL DISPLAY
CN192
W190
FD-6 BOARD
(See page 115.)
KEY MATRIX
S153 COUNTER RESET
S150 ZERO MEMORY
S154 EDIT CUE
S151 EDIT REV
S155 TIME
S152 DATE
K IN 4
K IN 3
CN150
FV-1 BOARD (See page 115.)
KEY MATRIX
SERVICE MODE
S164 PLAY
S168 REW
S165 FF
S166 STOP
S163 PAUSE
KIN 0
KIN 1
KIN 2
KIN 3
CN160
CAMERA
OFF
VTR
S160 POWER
EJ-4 BOARD
(See page 115.)
S169 EJECT
K IN 0
K OUT 0
W162
W161
CN191
LI BATT
W990
LI 3V
LITHIUM BATTERY
(See page 100.)
PA-13 BOARD
CAM STB
VDD
J930 REMOTE
LINCS DC
S930 STANDBY
LOCK
S931 START/STOP
(See page 104.)
SW-76 BOARD
CN932
S990 START/STOP
(See page 104.)
LA-1 BOARD
DRUM
VIDEO HEAD
CH 1
CH 2
CN003
SS-86 BOARD
(See page 95.)
REC/PB AMP
IC301
W003
VA-41 BOARD (SERVO)
(See page 96.)
PB RF
W360
Q250 BUFFER
LPF
PR RF (VIDEO, AUDIO)
REC AFT RF
Q251,252 LPF
PRE AMP
GCA
BALANCED MODULATOR
3fH BPF
fH BPF
AMP
PEAK DET
RV250 ATF BIAS
SAMPLING HOLD
SCHMITT
R/P
1/58 1/50 1/36 1/40
OSC
X250 5.9MHz
IC250
ATF SERVO
AMP
Q253
Q254
ATF LO
ATF ER
SLOW
TS B
RP PB MO
SEL 16k/


SS-86 BOARD
(SERVO/SYSTEM CONTROL)
(See page 101.)
FP-118 BOARD
(See pages 102, 103.)
CC-7 BOARD
(See page 100.)
DRUM
FLYING ERASE HEAD
FE(X)
CN003
Q302
AMP
Q303
ERESE OSC
FE ON
IC001
SERVO/MECHANISM CONTROL
W190
CN007
LINCS PWR
CC DOWN
DATA TO SLAVE
DATE TO MASTER
CLK
CS
SLAVE RESET
STB
REF V
VDD
CAM STB
CN191
LI BATT
W990
LI 3V
LITHIUM BATTERY
(See page 100.)
PA-13 BOARD
CAMERA (VC-49)
VD
W004
CAM STB
IC006 ②
0.03Vp-p
IC006 ③
5Vp-p
2V
IC006 ②, ③ REC/PB
DIGITAL TITLE
DATA TO MSTR
DATA TO SEAVE
LINCS POWER
DATE TO SLAVE
DATA TO MSTER
FLL AUTO
DEW
T/E LED
LOAD
UNLOAD
REC PROOF
MODE SW1
MODE SW2
MODE SW3
T REEL FG
S,REEL FG
TOP SENS
END SENS
SP/LP
BATTERY LVL
STILL ADJ
VA REF
DRUM BLK
X TAL IN
X TAL OUT
SWP DLY
D PWM
BRK PLS
C PWM
CAP FWD/RVS
CAP ON
IC003
LOADING MOTOR DRIVE
IN 2
IN 4
IN 1
IN 3
OUT 1
OUT 3
OUT 2
OUT 4
Q007
LED DRIVE
DEW SENS
T/E LED
T/S LED
LOAD MTR(+)
LOAD MTR(−)
MODE SW1
MODE SW2
MODE SW3
T FG
S FG
ME/MP
CC DOWN
DEW SENSOR
M903 LOADING MOTOR
MODE SWITCH
T/E SENS LED
T/E FGS LED
CC DOWN S902
Q006
TAPE TOP DETECT
PH002 TAPE TOP SENSOR
Q005
TAPE END DETECT
PH001 TAPE END SENSOR
CN006
UNREG (CN006①,②)
RV001 BATTERY LEVEL
RV003 STILL
Q075
EVER 5V (IC005)
VTR POWER (Q071)
IC004
DRUM MOTOR DRIVE
SS 5V (W003 ⑳)
UNREG (CN006①,②)
POWER OFF
OVER LOAD DET
Vcc
BRAKE
IB CONTROL
EMF DET
CW/CCW
EMF MIX
STARTER
UL
VL
WL
DRUM(U)
DRUM(V)
DRUM(W)
CN001
2Vp-p
12MHz
IC001 ㉔ REC/PB
X001 12MHz
RV002 SWITCH POSITION
Q054
STARTER
UNREG
SS 5V
Q053(1/2)
Q052
PWM POWER DRIVE
LPF
Q055
Q051
D COM
IC007
CAPSTAN MOTOR DRIVE
CAP CW/CCW
120° LOGIC
POWER OFF
HE POWER
CAP(U)
CAP(V)
CAP(W)
FP-118
6Vp-p
IC001 ㉕ REC/PB
UNREG (CN006①,②)
SS 5V (W003 ⑳)
VHE (+)(−)
UHE (+)(−)
WHE (+)(−)
VH(+)
UHE(+),(−)
VHE(+),(−)
WHE(+),(−)
J930 REMOE
LINCS DC
S930 STANDBY
LOCK
S931 START/STOP
(See page 104.)
SW-76 BOARD
CN932
S990 START/STOP
(See page 104.)
LA-1 BOARD
Q164,165
EVER 5V (W190 ⑧)
Q166 EVER 5V DETECT
VIDEO (VA-41)
V SO
V CS
V CK
W003
A MUTE
Q076,078
VTR POWER
POWER
Q071(1/2)
AUDIO (VA-41)
CAM POWER
VA PB MODE
SP/LP
RF SWP
RP PB MODE
FE ON
H CHG
ME/MP
JOG
JOG VD
REF V
CLOG
V MUTE
CLK
CG WIND
DATA TO SLANE
STB
V. SO
V. CS
V. CLK
A MUTE
VTR POWER
CAM POWER
VA PB MODE
SP/LP
JOG VD
CLOG
V MUTE
CG WIND
D003
D004
TP303
TP006
IC006
DRUM PG FG
CN002
D FG
D PG
D COW
WAVE SHAPER
DC BIAS
WAVE SHAPER
C FG
TP007
CAPSTAN FG
FP118
C FG(+)
C FG(−)
RF SWP
REF V
D FG
D PG
C FG
5Vp-p
IC006 ⑦ REC/PB
IC006 ⑨ REC/PB
IC001 ⑭ REC/PB
ATF LOCK
ATF ERP
SLOW GAIN
TS-B
SEL 16k/47k
SEL 1
SEL 2
IC250
ATF SERVO
SAMPLING HOLD
SCHMITT
AMP
R/P
Q253
Q254
ATF LOCK
ATF ERR
SLOW
TS B
RP PB MODE
SEL 16k/47k
W360
VA PB MODE
W003 CN004



SS-86 BOARD
(SERVO/SYSTEM CONTROL)
(See page 101.)
FP-118 BOARD
(See pages 102, 103.)
CC-7 BOARD
(See page 100.)
FP-53 BOARD
(See page 100.)
PA-13 BOARD
(See page 100.)
DRUM
FLYING ERASE HEAD
FE(X)
CN003
Q302 AMP
Q303 ERESE OSC
FE ON
IC001
SERVO/MECHANISM CONTROL
IC003
LOADING MOTOR DRIVE
IC004 DRUM MOTOR DRIVE
IC007 CAPSTAN MOTOR DRIVE
IC006
CN007
LINCS PWR
CC DOWN
DATA TO SLAVE
DATA TO MASTER
CLK
CS
SLAVE RESET
STB
REF V
VDD
CAMERA (VC-49)
VD
W004
DATA TO SLAVE
CLK
CAM STB
0.03Vp-p
5Vp-p
2V
IC006 ②, ③ REC/PB
DIGITAL TITLE
VDD
CS
CLK
DATA TO MSTR
DATA TO SEAVE
SLAVE RESET
LINCS POWER
DATE TO SLAVE
DATA TO MSTER
CLK
CS
SLAVE RESET
FLL AUTO
DEW
T/E LED
LOAD
UNLOAD
REC PROOF
MODE SW1
MODE SW2
MODE SW3
T REEL FG
S.REEL FG
TOP SENS
END SENS
SP/LP
BATTERY LVL
STILL ADJ
VA REF
DRUM BLK
X TAL IN
X TAL OUT
SWP DLY
D PWM
BRK PLS
C PWM
CAP FWD/RVS
CAP ON
IN 2
IN 4
IN 1
IN 3
OUT 1
OUT 3
OUT 2
OUT 4
Q007 LED DRIVE
DEW SENS
T/E LED
T/S LED
LOAD MTR(+)
LOAD MTR(−)
REC PROOF
MODE SW1
MODE SW2
MODE SW3
T FG
S FG
ME/MP
CC DOWN
DEW SENSOR
M903 LOADING MOTOR
MODE SWITCH
T/E FGS LED
CC DOWN S902
D302 T/E SENS
T/E SENS LED
D304 T-REEL FG
D303 S-REEL FG
ME/MP
REC PROOF
S301
Q006 TAPE TOP DETECT
PH002 TAPE TOP SENSOR
Q005 TAPE END DETECT
PH001 TAPE END SENSOR
CN006
SP/LP
S990
SP/LP
SP
LP
UNREG (CN006 ①, ②)
RV001 BATTERY LEVEL
RV003 STILL
Q075
EVER 5V (IC005)
VTR POWER (Q071)
SS 5V (W003 ⑳)
UNREG (CN006 ①, ②)
POWER OFF
OVER LOAD DET
Vcc
IC004
BRAKE
IB CONTROL
UL
VL
WL
EMF DET
CW/CCW
EMF MIX
STARTER
Q054 STARTER
DRUM(U)
DRUM(V)
DRUM(W)
CN001
M901 DRUM MOTOR
2Vp-p
12MHz
IC001 ㉔ REC/PB
X001 12MHz
IC001 ㉕ REC/PB
RV002 SWITCH POSITION
UNREG
Q052
Q053(1/2)
PWM POWER DRIVE
LPF
Q055
Q053(1/2)
Q051
D COM
CN001
CAP CW/CCW
POWER OFF
120° LOGIC
HE POWER
U
V
W
CAP(U)
CAP(V)
CAP(W)
FP-118
M902 CAPSTAN MOTOR
HALL DEVICE
VH(+)
UHE(+),(−)
VHE(+),(−)
WHE(+),(−)
FP-118
VHE (+)(−)
UHE (+)(−)
WHE (+)(−)
UNREG (CN006 ①, ②)
SS 5V (W003 ⑳)
6Vp-p
VIDEO (VA-41)
V SO
V CS
V CK
W003
V.SO
V.CS
V.CLK
A MUTE
Q076,078
VTR POWER
POWER
Q071(1/2)
VTR POWER
CAM POWER
VA PB MODE
SP/LP
RF SWP
CAM POWER
VA PB MODE
SP/LP
RF SWP
VIDEO
VA PB MODE
SP/LP
RF SWP
RF PB MODE
FE ON
H CHG
ME/MP
JOG
RP PB MODE
FE ON
H CHG
JOG
JOG VD
REF V
CLOG
V MUTE
H CHG
JOG
JOG VD
CLOG
V MUTE
CLK
CG WIND
CG WIND
DATA TO SLANE
STB
D003
D004
TP303
TP006
RF SWP
REF V
D FG
D PG
C FG
DRUM
PG
FG
CN002
D FG
D PG
D COW
WAVE SHAPER
WAVE SHAPER
DC BIAS
WAVE SHAPER
TP007
C FG
CAPSTAN FG
FP118
C FG(+)
C FG(−)
IC006 ⑦ REC/PB
5Vp-p
2V
ATF LOCK
ATF ERP
SLOW GAIN
TS-B
SEL 16k/47k
VA PB MODE
W003
CN004
IC006 ⑨ REC/PB
IC001 ⑭ REC/PB
SEL 1
SEL 2
SEL 1
SEL 2
CN007
CAM STBY
CAM REC
W001

3-8. MECHANISM CONTROLLER (μPD78112-GF)

This is the 8-bit, single chip microprocessor having the following characteristics.

- μCOM-78K/I
- high speed instruction execution
  Instruction cycle : 333ns/12MHz
- On-chip memory mapping for peripheral hardware (special function register)
- On-chip high function interrupt controller
  Two kinds of processing forms (vector interrupt function/macro service function)
- On-chip high precision A/D converter
  8 bit precision : 8 analog inputs
  One analog input conversion time : 26.7μs/12MHz
- On-chip hardware suitable for servo control of VTR, etc. (servo control unit)
  16 bit free running counter + capture register x 2
  special pulse output control function
  12 bit precision PWM output x 2

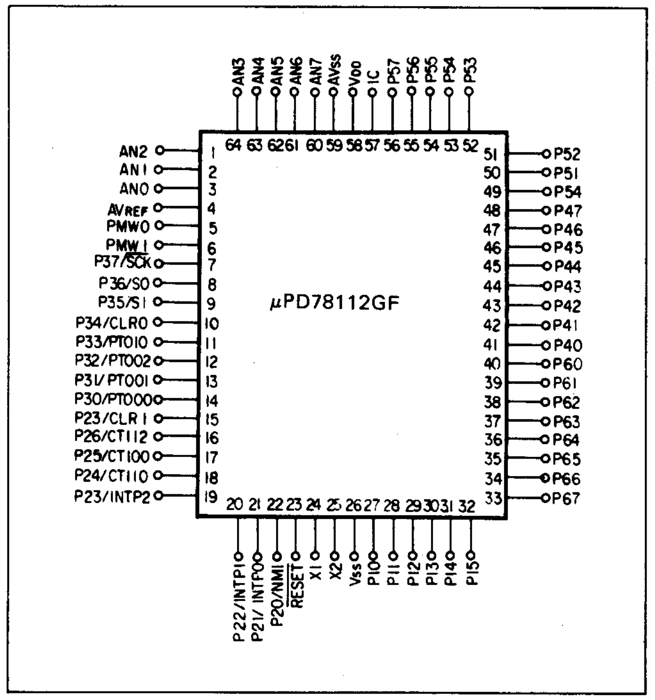

μPD78112GF
AN2
AN1
AN0
AVREF
PMW0
PMW1
P37/$\overline{\text{SCK}}$
P36/SO
P35/SI
P34/CLR0
P33/PTO10
P32/PTO02
P31/PTO01
P30/PTO00
P23/CLR1
P26/CTI12
P25/CTI00
P24/CTI10
P23/INTP2
P22/INTP1
P21/INTP0
P20/NMI
$\overline{\text{RESET}}$
X1
X2
Vss
P10
P11
P12
P13
P14
P15
P67
P66
P65
P64
P63
P62
P61
P60
P40
P41
P42
P43
P44
P45
P46
P47
P54
P51
P52
P53
P54
P55
P56
P57
IC
VDD
AVss
AN7
AN6
AN5
AN4
AN3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 61 62 63 64

Fig. 1. μPD78112 pin assignment diagram

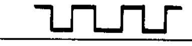
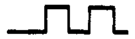
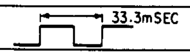
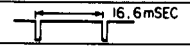
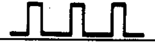
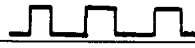
PIN NO	Signal name	I/O	Signal status	Function
1	DEW	I	Analog input	DEW detecting pin. When DEW (condensation) occurs, more than 430mV generates.
2	ATF ERR	I	Analog input	ATF ERROR input pin.
3	SWP DLY	I	Analog input	RF SWP adjustment input pin.
4	VA REF	O		A/D converter reference voltage input pin.
5	D PWM	O	PWM output	Drum motor drive signal
6	C PWM	O	PWM output	Capstan motor drive signal
7	CLK	I		Serial communication clock input.
8	DATA TO MSTR	O		Data output pin for the data to be sent to mode control CPU.
9	DATA TO SLVE	I		Data input pin for the data coming from the mode control CPU.
10	D PG	I		Drum PG input pin.
11	SP/$\overline{\text{LP}}$	O	Logic status	Playback mode output pin. SP="H", LP="L"
12	$\overline{\text{JOG}}$	O	Logic status	Video circuit normal/variable speed playback select signal. "H" during STILL, SLOW, FRAM, CUE/REV, FRSEARCH, REC REV, EDIT CUE, EDIT REV.
13	JOG VD	O	Logic status	False VD output inserted into video signal during variable speed playback mode.
14	RF SWP	O	 33.3mSEC	RF SWP output pin.
15	REF V	I	 16.6mSEC	REF V input pin.
16	$\overline{\text{FULL AUTO}}$	I	Logic status	Fixed "H"
17	D FG	I		Drum FG input.
18	C FG	I		Capstan FG input.
19	$\overline{\text{END SENS}}$	I	Logic status	END-side END sensor input.

Table 1 (1)

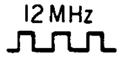
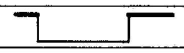
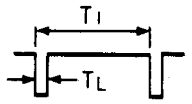
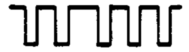
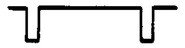
<table>
<tr><th>PIN NO</th><th>Signal name</th><th>I/O</th><th>Signal status</th><th>Functions</th></tr>
<tr><td>20</td><td>CLOG</td><td>I</td><td>Logic status</td><td>Head clogging detect input.</td></tr>
<tr><td>21</td><td>$\overline{\text{TOP SENS}}$</td><td>I</td><td>Logic status</td><td>TOP-side TOP sensor input.</td></tr>
<tr><td>22</td><td>$\overline{\text{CS}}$</td><td>I</td><td>Logic status</td><td>Input signal to start data communication. Starting at fall-down edge.</td></tr>
<tr><td>23</td><td>$\overline{\text{SLVE RESET}}$</td><td>I</td><td>Logic status</td><td>RESET input. "L" RESET.</td></tr>
<tr><td>24</td><td>X'TAL IN</td><td>I</td><td rowspan="2"> 12MHz</td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>25</td><td>X'TAL OUT</td><td>O</td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>26</td><td>Vss</td><td></td><td></td><td>GND pin</td></tr>
<tr><td>27</td><td>VA PB MODE</td><td>O</td><td>Logic status</td><td>Video, audio REC/PB select signal. "H" during PB.</td></tr>
<tr><td>28</td><td>V MUTE</td><td>O</td><td>Logic status</td><td>Video, muting signal. "H" during muting.</td></tr>
<tr><td>29</td><td>A MUTE</td><td>O</td><td>Logic status</td><td>Audio, muting signal. "H" during muting.</td></tr>
<tr><td>30</td><td>VIDEO CSO</td><td>I</td><td></td><td>Input signal to start video data communication.</td></tr>
<tr><td>31</td><td>$\overline{\text{T/E LED}}$</td><td>O</td><td></td><td>Tape top/end detecting LED ON/OFF.
Reel rotation detecting LED ON/OFF.
<table><tr><th>mode</th><th>REC/PB</th><th>CUE/REV</th><th>FF/REW</th></tr><tr><td>T_I</td><td>100</td><td>14</td><td>2</td></tr><tr><td>T_L</td><td>1</td><td>1</td><td>1</td></tr></table>(unit in msec)</td></tr>
<tr><td>32</td><td>CG WIND</td><td>O</td><td>"H"=MIX REC
"L"=NOT</td><td>Selection signal whether character generator output will be recorded or will not be recorded.</td></tr>
<tr><td>33</td><td>CAP ON</td><td>O</td><td>Logic status</td><td>Capstan motor ON/OFF signal. "H" level means capstan motor ON.</td></tr>
<tr><td>34</td><td>$\overline{\text{ATF LOCK}}$</td><td>I</td><td>Logic status</td><td>"L" when PB mode ATF phase servo is normally phase-locked.</td></tr>
<tr><td>35</td><td>VTR Power</td><td>O</td><td>Logic status</td><td rowspan="2">DC-DC converter ON/OFF signal.
<table><tr><th>mode</th><th>VTR Power</th><th>CAM Power</th></tr><tr><td>VTR</td><td>"H"</td><td>"L"</td></tr><tr><td>OFF</td><td>"L"</td><td>"L"</td></tr><tr><td>CAM</td><td>"H"</td><td>"H"</td></tr></table></td></tr>
<tr><td>36</td><td>CAM Power</td><td>O</td><td>Logic status</td></tr>
<tr><td>37</td><td>VIDEO CLK</td><td>I</td><td></td><td>Clock for video serial data communication.</td></tr>
<tr><td>38</td><td>TS B</td><td>O</td><td></td><td>ATF LOCK sampling hold signal. "L" during sampling mode. "H" during hold mode.</td></tr>
<tr><td>39</td><td>CAP BRK</td><td>O</td><td>Logic status</td><td>This is the signal that applies full voltage to capstan motor.</td></tr>
<tr><td>40</td><td>CAP FWD/$\overline{\text{RVS}}$</td><td>O</td><td>Logic status</td><td>Capstan motor rotating direction select signal. "H" during normal direction (FWD) rotation.</td></tr>
<tr><td>41</td><td>LOAD</td><td>O</td><td>Logic status</td><td rowspan="2">Threading motor control signal.
<table><tr><th>Operation
Signal name</th><th>LOAD</th><th>UNLOAD</th><th>BRAKE</th></tr><tr><td>LOAD</td><td>H</td><td>L</td><td>H</td></tr><tr><td>UNLOAD</td><td>L</td><td>H</td><td>H</td></tr></table></td></tr>
<tr><td>42</td><td>UNLOAD</td><td>O</td><td>Logic status</td></tr>
<tr><td>43</td><td>RP PB MODE</td><td>O</td><td>Logic status</td><td>REC/PB amplifier REC/PB select signal. "H" during PB.</td></tr>
<tr><td>44</td><td>$\overline{\text{FE ON}}$</td><td>O</td><td>Logic status</td><td>Flying erase oscillation ON/OFF signal, "L" during oscillation.</td></tr>
</table>

Table 1 (2)

PIN NO
45
46
47
48
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64

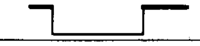
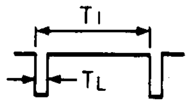
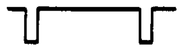
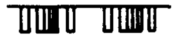
<table>
<tr><th>PIN NO</th><th>Signal name</th><th>I／O</th><th>Signal status</th><th>Functions</th></tr>
<tr><td>20</td><td>CLOG</td><td>I</td><td>Logic status</td><td>Head clogging detect input.</td></tr>
<tr><td>21</td><td>$\overline{\text{TOP SENS}}$</td><td>I</td><td>Logic status</td><td>TOP-side TOP sensor input.</td></tr>
<tr><td>22</td><td>$\overline{\text{CS}}$</td><td>I</td><td>Logic status</td><td>Input signal to start data communication. Starting at fall-down edge.</td></tr>
<tr><td>23</td><td>$\overline{\text{SLVE RESET}}$</td><td>I</td><td>Logic status</td><td>RESET input. "L" RESET.</td></tr>
<tr><td>24</td><td>X'TAL IN</td><td>I</td><td rowspan="2"> </td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>25</td><td>X'TAL OUT</td><td>O</td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>26</td><td>V_{SS}</td><td></td><td></td><td>GND pin</td></tr>
<tr><td>27</td><td>VA PB MODE</td><td>O</td><td>Logic status</td><td>Video, audio REC/PB select signal. "H" during PB.</td></tr>
<tr><td>28</td><td>V MUTE</td><td>O</td><td>Logic status</td><td>Video, muting signal. "H" during muting.</td></tr>
<tr><td>29</td><td>A MUTE</td><td>O</td><td>Logic status</td><td>Audio, muting signal. "H" during muting.</td></tr>
<tr><td>30</td><td>VIDEO CSO</td><td>I</td><td></td><td>Input signal to start video data communication.</td></tr>
<tr><td>31</td><td>$\overline{\text{T／E LED}}$</td><td>O</td><td> </td><td>Tape top/end detecting LED ON/OFF.
Reel rotation detecting LED ON/OFF.
<table>
<tr><th>mode</th><th>REC／PB</th><th>CUE／REV</th><th>FF／REW</th></tr>
<tr><td>T_I</td><td>100</td><td>14</td><td>2</td></tr>
<tr><td>T_L</td><td>1</td><td>1</td><td>1</td></tr>
</table>
(unit in msec)</td></tr>
<tr><td>32</td><td>CG WIND</td><td>O</td><td>"H"=MIX REC
"L"=NOT</td><td>Selection signal whether character generator output will be recorded or will not be recorded.</td></tr>
<tr><td>33</td><td>CAP ON</td><td>O</td><td>Logic status</td><td>Capstan motor ON/OFF signal. "H" level means capstan motor ON.</td></tr>
<tr><td>34</td><td>$\overline{\text{ATF LOCK}}$</td><td>I</td><td>Logic status</td><td>"L" when PB mode ATF phase servo is normally phase-locked.</td></tr>
<tr><td>35</td><td>VTR Power</td><td>O</td><td>Logic status</td><td rowspan="2">DC-DC converter ON/OFF signal.
<table>
<tr><th>mode</th><th>VTR Power</th><th>CAM Power</th></tr>
<tr><td>VTR</td><td>"H"</td><td>"L"</td></tr>
<tr><td>OFF</td><td>"L"</td><td>"L"</td></tr>
<tr><td>CAM</td><td>"H"</td><td>"H"</td></tr>
</table></td></tr>
<tr><td>36</td><td>CAM Power</td><td>O</td><td>Logic status</td></tr>
<tr><td>37</td><td>VIDEO CLK</td><td>I</td><td> </td><td>Clock for video serial data communication.</td></tr>
<tr><td>38</td><td>TS B</td><td>O</td><td></td><td>ATF LOCK sampling hold signal. "L" during sampling mode. "H" during hold mode.</td></tr>
<tr><td>39</td><td>CAP BRK</td><td>O</td><td>Logic status</td><td>This is the signal that applies full voltage to capstan motor.</td></tr>
<tr><td>40</td><td>CAP FWD／$\overline{\text{RVS}}$</td><td>O</td><td>Logic status</td><td>Capstan motor rotating direction select signal. "H" during normal direction (FWD) rotation.</td></tr>
<tr><td>41</td><td>LOAD</td><td>O</td><td>Logic status</td><td rowspan="2">Threading motor control signal.
<table>
<tr><th>Operation / Signal name</th><th>LOAD</th><th>UNLOAD</th><th>BRAKE</th></tr>
<tr><td>LOAD</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>UNLOAD</td><td>L</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>42</td><td>UNLOAD</td><td>O</td><td>Logic status</td></tr>
<tr><td>43</td><td>RP PB MODE</td><td>O</td><td>Logic status</td><td>REC/PB amplifier REC/PB select signal. "H" during PB.</td></tr>
<tr><td>44</td><td>$\overline{\text{FE ON}}$</td><td>O</td><td>Logic status</td><td>Flying erase oscillation ON/OFF signal, "L" during oscillation.</td></tr>
</table>

Table 1 (2)

<table>
<tr><th>PIN NO</th><th>Signal name</th><th>I／O</th><th>Signal status</th><th>Functions</th></tr>
<tr><td>45</td><td>SEL1</td><td>O</td><td>Logic status</td><td rowspan="2">ATF REF PILOT signal frequency control.
<table>
<tr><th>ATF REF PILOT</th><th>f_1</th><th>f_2</th><th>f_3</th><th>f_4</th></tr>
<tr><td>SEL1</td><td>H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>SEL2</td><td>H</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>46</td><td>SEL2</td><td>O</td><td>Logic status</td></tr>
<tr><td>47</td><td>SEL 16K／$\overline{\text{47K}}$</td><td>O</td><td>Logic status</td><td>ATF BPF select signal. "L" when detecting ATF error in f1 and f3 tracks. "H" when detecting ATF error in f2 and f4 tracks.</td></tr>
<tr><td>48</td><td>HCHG</td><td>O</td><td>Logic status</td><td>Head select signal. "H"=CH-1' "L"=CH-1.</td></tr>
<tr><td>49</td><td>$\overline{\text{REC PROOF SW}}$</td><td>I</td><td>Logic status</td><td>"H" when cassette's erroneous erasure preventing switch is set in the erasure prevention side.</td></tr>
<tr><td>50</td><td>MSW1</td><td>I</td><td>Logic status</td><td rowspan="3">Mechanism mode switch input (three bit structure, mechanical position detection)</td></tr>
<tr><td>51</td><td>MSW2</td><td>I</td><td>Logic status</td></tr>
<tr><td>52</td><td>MSW3</td><td>I</td><td>Logic status</td></tr>
<tr><td>53</td><td>VIDEO SO</td><td>O</td><td>Logic status</td><td>Data line for the data to be sent to CXA1201.</td></tr>
<tr><td>54</td><td>$\overline{\text{EDIT}}$</td><td>I</td><td></td><td>Input signal for EDIT selection. "H": OFF. "L": ON</td></tr>
<tr><td>55</td><td>DRUM BRK</td><td>O</td><td>Logic status</td><td>Slow mode drum fH compensation drum brake signal.</td></tr>
<tr><td>56</td><td>SLOW GAIN</td><td>O</td><td>Logic status</td><td>ATF ERROR's gain select signal.</td></tr>
<tr><td>57</td><td>VPP</td><td></td><td></td><td>Fixed to power supply voltage.</td></tr>
<tr><td>58</td><td>V_{DD}</td><td></td><td></td><td>Power supply pin.</td></tr>
<tr><td>59</td><td>AV_{SS}</td><td></td><td></td><td>A/D converter's GND pin.</td></tr>
<tr><td>60</td><td>STILL ADJ</td><td>I</td><td></td><td>Input signal for STILL noise position adjustment.</td></tr>
<tr><td>61</td><td>JAP／$\overline{\text{USA}}$</td><td>I</td><td>Analog input</td><td>Destination select SW input. More than 2.5V JAPAN. Less than 2.5V USA.</td></tr>
<tr><td>62</td><td>BATT LVL</td><td>I</td><td>Analog input</td><td>BATTERY LEVEL input. This is input at approx.1/2.</td></tr>
<tr><td>63</td><td>T REEL FG</td><td>I</td><td>Analog input</td><td>Take-up side REEL FG input. Used to detect reel rotation.</td></tr>
<tr><td>64</td><td>S REEL FG</td><td>I</td><td>Analog input</td><td>Supply side REEL FG input. Used to detect reel rotation.</td></tr>
</table>

Table 1 (3)

3-9. SYSTEM CONTROL – CAMERA BLOCK INTERFACE

Signal	I/O	Pin No.	Input/Output Level
AF ON	O	SS-86 board IC200 ⑤	"H" when auto focus in ON.
$\overline{\text{TELE IN}}$	I	SS-86 board IC200 ③	"L" when zoom switch TELE is pressed.
$\overline{\text{WIDE IN}}$	I	SS-86 board IC200 ④	"L" when zoom switch WIDE is pressed.
$\overline{\text{TALLY}}$	O	SS-86 board IC200 ⑭	"L" when in CAMERA mode and REC mode.
CAM STB	O	FC-18 board IC190 ③	4V cycle "H" pulse. ( ) Strobe signal for serial data transmission.
CLK	O	FC-18 board IC190 ⑦	2V cycle "L" Pulse series. () Serial data transmission clock.
DATA TO SLAVE	O	FC-18 board IC190 ⑥	2V cycle pulse series. ( ) Serial data transmission.
TELE OUT	O	SS-86 board IC200 ⑦	"H" during the zoom motor is rotating TELE direction.
WIDE OUT	O	SS-86 board IC200 ⑧	"H" during the zoom motor is rotating WIDE direction.
BACK LIGHT	O	SS-86 board IC200 ⑥	"H" during Back Light is lit.

3-10. SYSTEM CONTROL – VIDEO, AUDIO BLOCK INTERFACE

Signal	I/O	Pin No.	VTR mode												CAMERA mode			
			STOP	FF	REW	FR SEARCH		PB	PICTUER SEARCH		PB•PAUSE	FRAME	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REVIEW	REC
						CUE	REVIEW		CUE	REVIEW								
SP/$\overline{\text{LP}}$	O	SS-86 board IC001 ⑪	H	H	H	∗ 1	∗ 1	∗ 2	∗ 1	∗ 1	∗ 1	∗ 1	H	H	H	H	H	H
$\overline{\text{JOG}}$	O	SS-86 board IC001 ⑫	H	H	H	L	L	H	L	L	L	L	H	H	H	L	L	H
JOG VD	O	SS-86 board IC001 ⑬	L	L	L	∗ 3	∗ 3	L	∗ 3	∗ 3	∗ 3	∗ 3	L	L	L	∗ 3	∗ 3	L
VA SWP	O	SS-86 board IC001 ⑭	H/L	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4
REF V	O	SS-86 board IC001 ⑮	∗ 5	∗ 5	∗ 5	L	L	L	L	L	L	L	∗ 5	∗ 5	∗ 5	L	L	∗ 5
CLOG	I	SS-86 board IC001 ⑳	H	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	H			∗ 6	∗ 6	H
VA PB MODE	O	SS-86 board IC001 ㉗	L	L	L	H	H	H	H	H	H	H	L	L	L	H	H	L
V MUTE	O	SS-86 board IC001 ㉘	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
A MUTE	O	SS-86 board IC001 ㉙	L	L	L	H	H	L	H	H	H	H	L	L	L	H	H	L
CG WIND	O	SS-86 board IC001 ㉜	H	H	H	H	H	H	H	H	H	H	H	H	∗ 7	∗ 7	∗ 7	∗ 7
CAM PWR	O	SS-86 board IC001 ㊱	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H
RP PB MODE	O	SS-86 board IC001 ㊸	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	L
$\overline{\text{FE ON}}$	O	SS-86 board IC001 ㊹	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	L
TAPE2/$\overline{\text{TAPE1}}$	O	FP-53board S301	"L" when using MP type tape.															
$\overline{\text{EDIT}}$	O	PA-13 board S990	"L" when EDIT switch (PA-13 board S990) is turuned ON.															
DATA TO SLAVE	O	FC-18 board IC190 ⑥	V cycle "L" pulse series (VTR mode)												"L" pulse series (CAMERA mode)			
CLK	O	FC-18 board IC190 ⑦	V cycle "L" pulse series (VTR mode)												"L" pulse series (CAMERA mode)			
CG STB	O	FC-18 board IC190 ②	L	L	L	L	L	L	L	L	L	L	L	L	∗ 8	∗ 8	∗ 8	∗ 8

∗ 1 Outputs identification results is PB mode immediately preceding. SP mode "H" , LP mode "L" .

∗ 2 Outputs identification results of playback tape recording mode (SP/LP). SP mode "H" ; LP mode "L" .

∗ 3 False VD signal (V cylce "H" pulse)

∗ 4 30Hz 50% duty pulse. Synchronized to drum rotation.

∗ 5 V cycle "L" pulse separated from line input video signal or camera video signal.

∗ 6 "H" at tape no signal portion or dropout portion. Input for head clogging detection.

∗ 7 V cycle pulse

∗ 8 2V cycle pulse series.

3-11. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	I/O	Pin No.	VT					
			STOP	FF	REW	FR SEARCH		PB
						CUE	REVIEW	
ATF ERR	I	SS-86 board IC001 ②		∗ 1	∗ 1	∗ 2	∗ 2	∗ 2
SWP DLY ∗ 3	I	SS-86 board IC001 ③						
D PWM	O	SS-86 board IC001 ⑤	L	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4
C PWM	O	SS-86 board IC001 ⑥	L	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5
D PG	I	SS-86 board IC001 ⑩	L	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6
RF SWP	O	SS-86 board IC001 ⑭	H/L	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7
REF V	I	SS-86 board IC001 ⑮	∗ 8	∗ 8	∗ 8	L	L	L
D FG	I	SS-86 board IC001 ⑰	H	∗ 9	∗ 9	∗ 9	∗ 9	∗ 9
C FG	I	SS-86 board IC001 ⑱	H/L	∗ 10	∗ 10	∗ 11	∗ 12	∗ 13
CAP ON	O	SS-86 board IC001 ㉝	L	H	H	H	H	H
$\overline{\text{ATF LOCK}}$	I	SS-86 board IC001 ㉞		H	H	H	H	L
$\overline{\text{TS B}}$	O	SS-86 board IC001 ㊳	H	H	H	H	H	∗ 15
CAP BRK	O	SS-86 board IC001 ㊴	L	L	L	L	L	L
CAP FWD/$\overline{\text{RVS}}$	O	SS-86 board IC001 ㊵	H	H	L	H	L	H
SEL1	O	SS-86 board IC001 ㊺	L	L	L	∗ 18	∗ 19	∗ 15
SEL2	O	SS-86 board IC001 ㊻	L	L	L	∗ 18	∗ 19	∗ 15
SEL 16K/$\overline{\text{47K}}$	O	SS-86 board IC001 ㊼	L	L	L	∗ 18	∗ 19	∗ 15
SLOW GAIN	O	SS-86 board IC001 (56)	L	L	L	L	L	L

irection.
irection.

	VTR mode									CAMERA mode			
FR SEARCH		PICTUER SEARCH											
REVIEW	PB	CUE	REVIEW	PB•PAUSE	FRAME	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REVIEW	REC
＊1	＊2	＊1	＊1	＊1	＊1	H	H	H	H	H	H
L	H	L	L	L	L	H	H	H	L	L	H
＊3	L	＊3	＊3	＊3	＊3	L	L	L	＊3	＊3	L
＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4
L	L	L	L	L	L	＊5	＊5	＊5	L	L	＊5
＊6	＊6	＊6	＊6	＊6	＊6	H			＊6	＊6	H
H	H	H	H	H	H	L	L	L	H	H	L
L	L	L	L	L	L	L	L	L	L	L	L
H	L	H	H	H	H	L	L	L	H	H	L
H	H	H	H	H	H	H	H	＊7	＊7	＊7	＊7
L	L	L	L	L	L	L	L	H	H	H	H
H	H	H	H	H	H	L	H	H	H	H	L
H	H	H	H	H	H	L	H	H	H	H	L
S990) is turuned ON.											
								"L" pulse series (CAMERA mode)			
								"L" pulse series (CAMERA mode)			
L	L	L	L	L	L	L	L	＊8	＊8	＊8	＊8

″ .

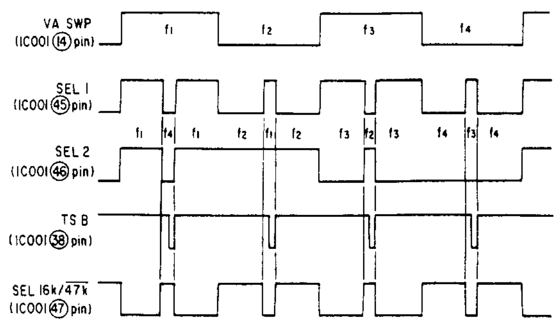
＊7 V cycle pulse
＊8 2V cycle pulse series.

3-11. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE

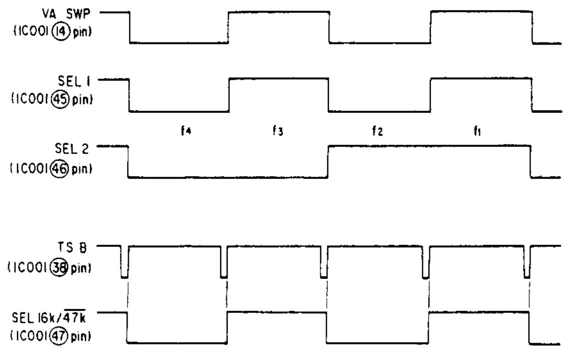
Signal	I/O	Pin No.	VTR MODE												CAMERA MODE			
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB•PAUSE	FRAME	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REV	REC
						CUE	REVIEW		CUE	REVIEW								
ATF ERR	I	SS-86 board IC001 ②		＊1	＊1	＊2	＊2	＊2	＊2	＊2	＊2	＊2	＊1			＊2	＊2	＊1
SWP DLY ＊3	I	SS-86 board IC001 ③																
D PWM	O	SS-86 board IC001 ⑤	L	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4
C PWM	O	SS-86 board IC001 ⑥	L	＊5	＊5	＊5	＊5	＊5	＊5	＊5	L	＊5	＊5	L	L	＊5	＊5	＊5
D PG	I	SS-86 board IC001 ⑩	L	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6
RF SWP	O	SS-86 board IC001 ⑭	H/L	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7
REF V	I	SS-86 board IC001 ⑮	＊8	＊8	＊8	L	L	L	L	L	L	L	＊8	＊8	＊8	L	L	＊8
D FG	I	SS-86 board IC001 ⑰	H	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9
C FG	I	SS-86 board IC001 ⑱	H/L	＊10	＊10	＊11	＊12	＊13	＊11	＊12	H/L	＊14	＊13	H/L	H/L	＊13	＊13	＊13
CAP ON	O	SS-86 board IC001 ㉝	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{ATF LOCK}}$	I	SS-86 board IC001 ㉞		H	H	H	H	L	H	H	H	H	H	H	H	L	L	H
$\overline{\text{TS B}}$	O	SS-86 board IC001 ㊳	H	H	H	H	H	＊15	H	H	H	H	H	H	H	＊15	＊16	H
CAP BRK	O	SS-86 board IC001 ㊴	L	L	L	L	L	L	L	L	L	＊17	L	L	L	L	L	L
CAP FWD/$\overline{\text{RVS}}$	O	SS-86 board IC001 ㊵	H	H	L	H	L	H	H	L	H	H	H	H	H	H	L	H
SEL1	O	SS-86 board IC001 ㊺	L	L	L	＊18	＊19	＊15	＊18	＊19	H	＊20	＊21	L	L	＊15	＊16	＊21
SEL2	O	SS-86 board IC001 ㊻	L	L	L	＊18	＊19	＊15	＊18	＊19	H/L	＊20	＊21	H	H	＊15	＊16	＊21
SEL 16K/$\overline{\text{47K}}$	O	SS-86 board IC001 ㊼	L	L	L	＊18	＊19	＊15	＊18	＊19	L	＊20	L	L	L	＊15	＊16	L
SLOW GAIN	O	SS-86 board IC001 (56)	L	L	L	L	L	L	L	L	H	H	L	L	L	L	L	L

＊1 Fixed voltage approx. 2V DC.
＊2 ATF error voltage
＊3 DC voltage set by RV002 is input.
＊4 53μsec cycle PWM wave. Duty ratio changes according to drum error signal.
＊5 53μsec cycle PWM wave. Duty ratio changes according to capstan error signal.
＊6 V cycle "H" pulse (_⊓__⊓__⊓_)
＊7 30Hz 50% duty pulse (_⌈‾‾‾⌉___⌈). Synchronized to drum rotation.
＊8 V cycle "L" pulse separated from line input video signal or camera video signal.
＊9 720Hz pulse
＊10 Approx. 16500Hz pulse
＊11 Approx. 5900Hz pulse (SP mode)
＊12 Approx. 5600Hz pulse (SP mode)
＊13 Approx. 826Hz pulse (SP mode)
＊14 Pulse input during step-by-step
＊15 Refer to Timing Chart 1
＊16 Refer to Timing Chart 2
＊17 "H" pulse output during step-by-step
＊18 Refer to Timing Chart 3
＊19 Refer to Timing Chart 4
＊20 Pulse output during step-by-step
＊21 Refer to Timing Chart 5

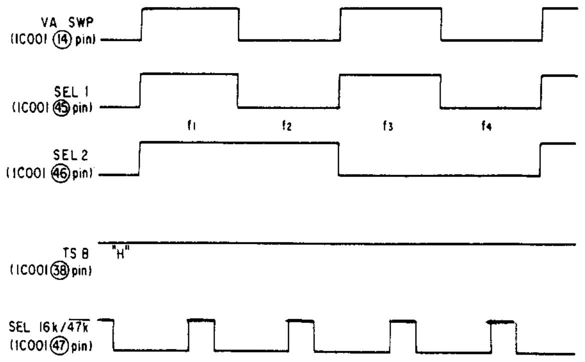
3-11-1. TIMING CHART 1 (PB, EDIT CUE)


VA SWP
(IC001⑭pin)
SEL 1
(IC001㊺pin)
SEL 2
(IC001㊻pin)
TS B
(IC001㊳pin)
SEL 16k/$\overline{47k}$
(IC001㊼pin)
f1
f2
f3
f4
f1 f4 f1 f2 f1 f2 f3 f2 f3 f4 f3 f4

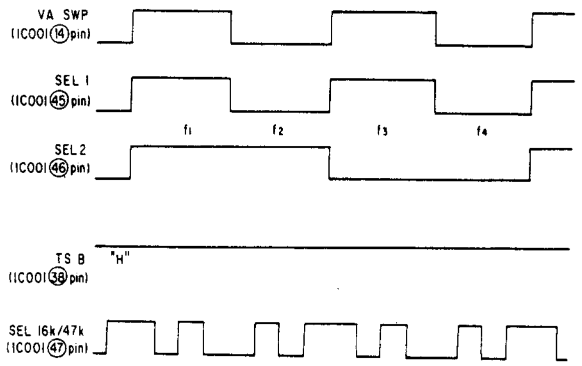
3-11-2. TIMING CHART 2 (EDIT REVIEW)


VA SWP
(IC001⑭pin)
SEL 1
(IC001㊺pin)
SEL 2
(IC001㊻pin)
TS B
(IC001㊳pin)
SEL 16k/$\overline{47k}$
(IC001㊼pin)
f4
f3
f2
f1

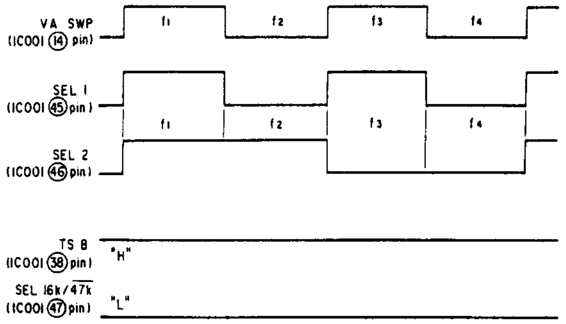
3-11-3. TIMING CHART 3 (CUE)


VA SWP
(IC001⑭pin)
SEL 1
(IC001㊺pin)
SEL 2
(IC001㊻pin)
TS B
(IC001㊳pin)
"H"
SEL 16k/$\overline{47k}$
(IC001㊼pin)
f1
f2
f3
f4

3-11-4. TIMING CHART 4 (REVIEW)


VA SWP
(IC001⑭pin)
SEL 1
(IC001㊺pin)
SEL 2
(IC001㊻pin)
TS B
(IC001㊳pin)
"H"
SEL 16k/47k
(IC001㊼pin)
f1
f2
f3
f4

3-11-5. TIMING CHART 5 (REC)

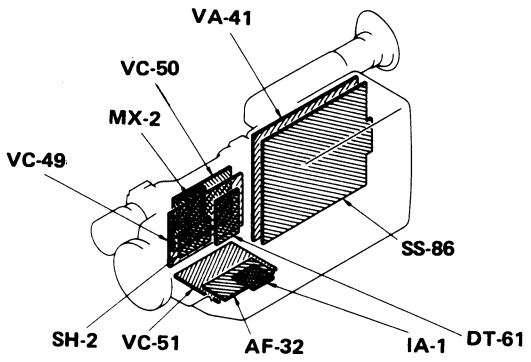

VA SWP
(IC001⑭pin)
SEL 1
(IC001㊺pin)
SEL 2
(IC001㊻pin)
TS B
(IC001㊳pin)
"H"
SEL 16k/$\overline{47k}$
(IC001㊼pin)
"L"
f1
f2
f3
f4

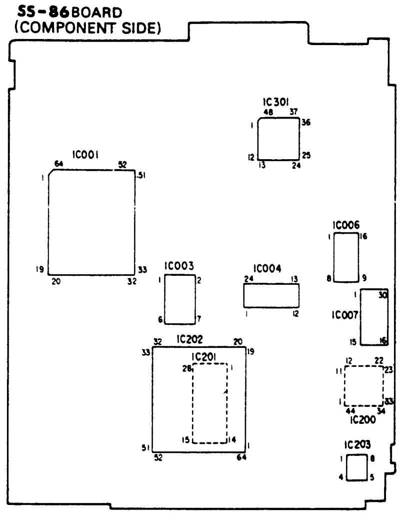
3-12. SYSTEM CONTROL — PERIPHERAL CIRCUIT INTERFACE

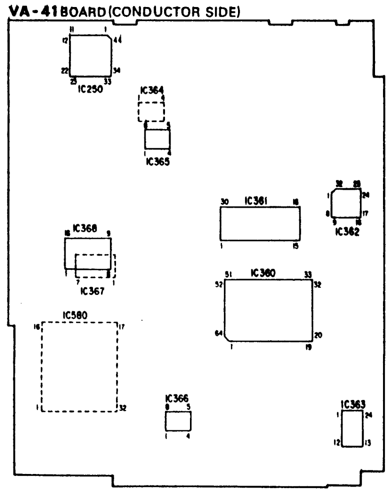
<table>
<tr><th>Signal</th><th>I/O</th><th>Pin No.</th><th>Input/Output Level</th></tr>
<tr><td>DEW</td><td>I</td><td>SS-86 board IC001①</td><td>Dew sensor input. Input voltage increases when there is dew.</td></tr>
<tr><td>VA REF</td><td>I</td><td>SS-86 board IC001④</td><td>Reference voltage input (5V DC) for A·D conversion of pin (1) (DEW), pin (2) (ATF ERR) and pin (3) (SWP DLY) input analog voltage (0-5V DC).</td></tr>
<tr><td>CLK</td><td>I</td><td>SS-86 board IC001⑦</td><td>Clock input from serial data transmission mode control(FC-18boardIC190).
V cycle "L" pulse (⊤ ⊤ ⊤) in VTR mode.</td></tr>
<tr><td>DATA TO MASTER</td><td>O</td><td>SS-86 board IC001⑧</td><td>Serial data output to mode control.
V cycle "L" pulse (⊤ ⊤ ⊤) in VTR mode.</td></tr>
<tr><td>DATA TO SLAVE</td><td>I</td><td>SS-86 board IC001⑨</td><td>Serial data input from mode control.
V cycle "L" pulse (⊤ ⊤ ⊤) in VTR mode.</td></tr>
<tr><td>$\overline{\text{END SENS}}$</td><td>I</td><td>SS-86 board IC001⑲</td><td>TAPE END sensor (SS-86 board PH001) input.
"L" pulse input at tape end. Normally "H" .</td></tr>
<tr><td>$\overline{\text{TOP SENS}}$</td><td>I</td><td>SS-86 board IC001㉑</td><td>TAPE TOP sensor (SS-86 board PH002) input.
"L" pulse input at tape top. Normally "H" .</td></tr>
<tr><td>$\overline{\text{CS}}$</td><td>I</td><td>SS-86 board IC001㉒</td><td>Serial signal chip select signal input from mode control. V cycle pulse (⎍⎍).</td></tr>
<tr><td>$\overline{\text{SLAVE RESET}}$</td><td>I</td><td>SS-86 board IC001㉓</td><td>Reset signal input from mode control.
Goes "L" when power is turned ON/OFF and servo/mechanism control (SS-86 board IC001) is reset.</td></tr>
<tr><td>$\overline{\text{E/T LED}}$</td><td>O</td><td>SS-86 board IC001㉛</td><td>Pulse output (⊤⊤⊤) for lighting up T/E SENS LED (FP-53 board D302). REC/PB 100msec cycle. CUE/REVIEW 17msec cycle. FF/REW 3msec cycle. "L" when LED is lit up.</td></tr>
<tr><td>VTR POWER</td><td>O</td><td>SS-86 board IC001㉟</td><td>VTR power ON/OFF signal output.
"H" during VTR mode and CAMERA mode. Operates DC-DC converter, and generates VTR 5V.</td></tr>
<tr><td>CAM POWER</td><td>O</td><td>SS-86 board IC001㊱</td><td>Camera power ON/OFF signal output.
"H" during CAMERA mode. Operates DC-DC converter and generates voltages used for camera.</td></tr>
<tr><td>LOAD</td><td>O</td><td>SS-86 board IC001㊶</td><td>"H" during cassette loading.</td></tr>
<tr><td>UNLOAD</td><td>O</td><td>SS-86 board IC001㊷</td><td>"H" during cassette eject.</td></tr>
<tr><td>$\overline{\text{REC PROOF}}$</td><td>I</td><td>SS-86 board IC001㊾</td><td>"H" when cassette which can not be recorded (erase prevention) is inserted.</td></tr>
<tr><td>M SW1</td><td>I</td><td>SS-86 board IC001㊿</td><td rowspan="3">Mode switch input for mechanism. Indicates mechanism position.
<table>
<tr><th>Mechanism position</th><th>READY</th><th>REC/PB/ CUE/REV/FF/REW</th><th>GL</th><th>STOP</th><th>EJECT</th><th>Mid-position</th></tr>
<tr><td>M SW1</td><td>L</td><td>H</td><td>H</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>M SW2</td><td>H</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>M SW3</td><td>H</td><td>L</td><td>L</td><td>H</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>M SW2</td><td>I</td><td>SS-86 board IC001(51)</td></tr>
<tr><td>M SW3</td><td>I</td><td>SS-86 board IC001(52)</td></tr>
<tr><td>V SO</td><td>O</td><td>SS-86 board IC001(53)</td><td>Video serial data output.</td></tr>
<tr><td>BATTERY LEVEL</td><td>I</td><td>SS-86 board IC001(62)</td><td>Main battery voltage level detection input.</td></tr>
<tr><td>T REEL FG</td><td>I</td><td>SS-86 board IC001(63)</td><td>T REEL FG (FP-53 board D304) input.
Pulse corresponds to S reel rotation.</td></tr>
<tr><td>S REEL FG</td><td>I</td><td>SS-86 board IC001(64)</td><td>S REEL FG (FP-53 board D303) input.
Pulse corresponds to S reel rotation.</td></tr>
</table>

3-13. AUDIO BLOCK DIAGRAM

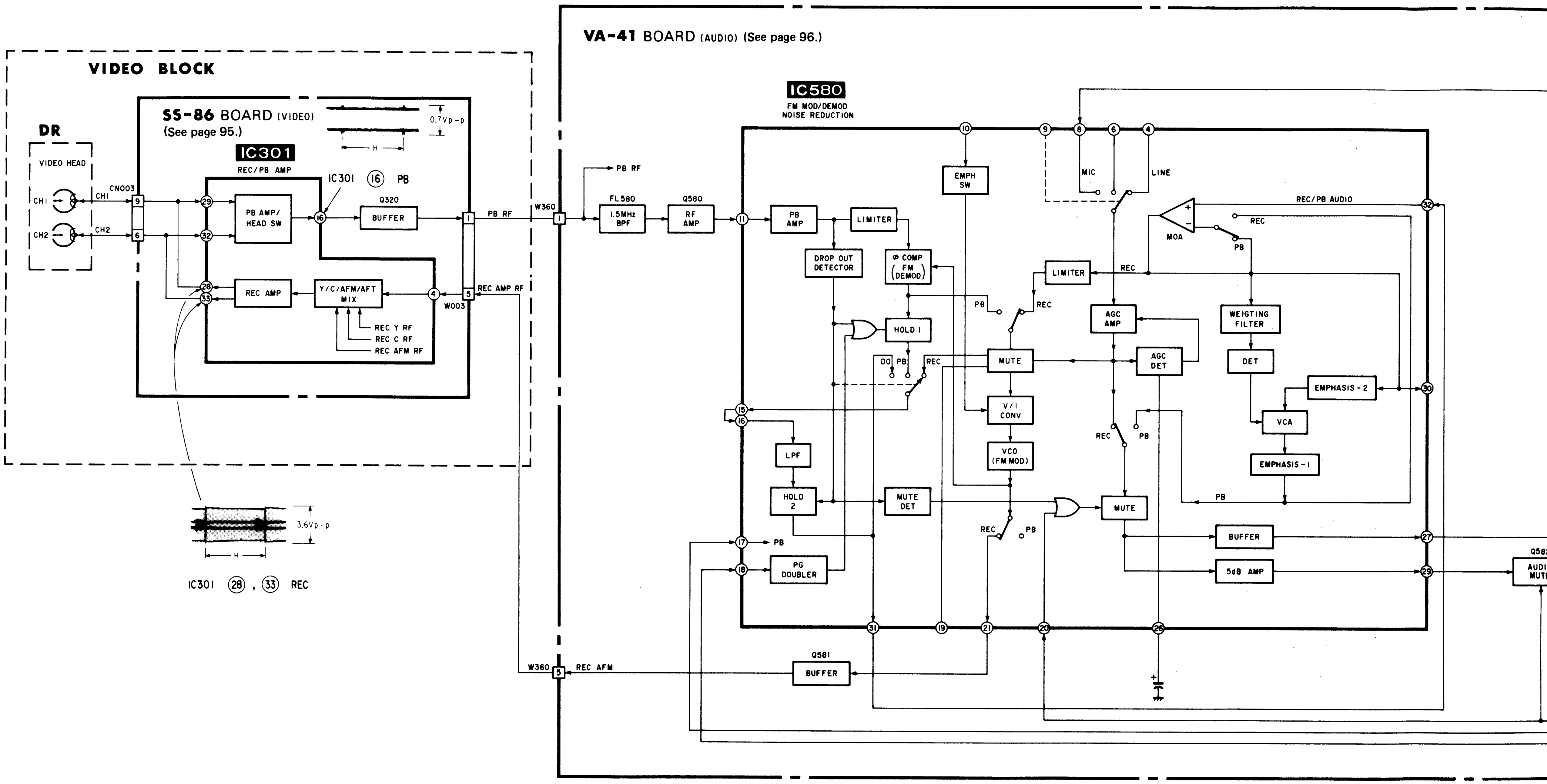
- ( ) near the board name indicates the schematic diagram page.

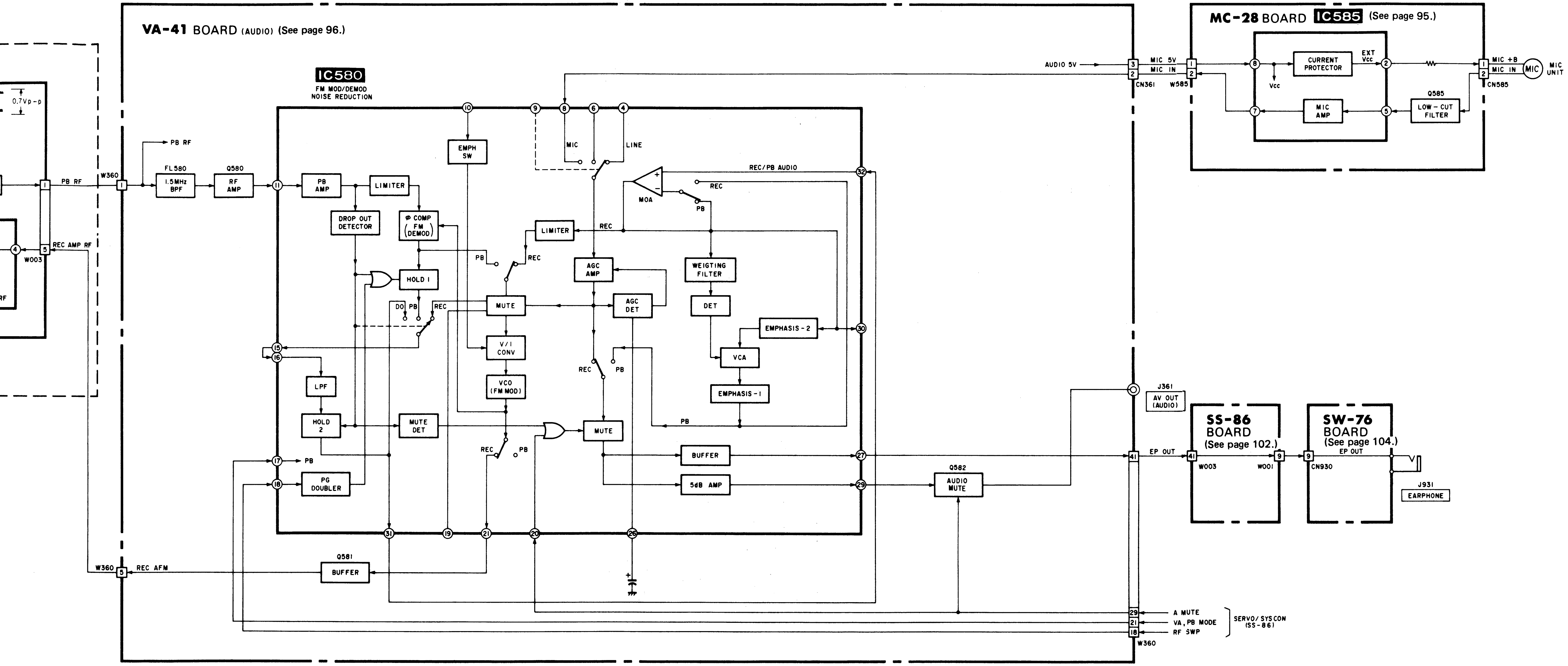

VA-41
VC-50
MX-2
VC-49
SS-86
SH-2
VC-51
AF-32
IA-1
DT-61


SS-86BOARD (COMPONENT SIDE)
IC301
IC001
IC003
IC004
IC006
IC007
IC202
IC201
IC200
IC203


VA-41BOARD(CONDUCTOR SIDE)
IC250
IC364
IC365
IC361
IC362
IC368
IC367
IC360
IC580
IC366
IC363

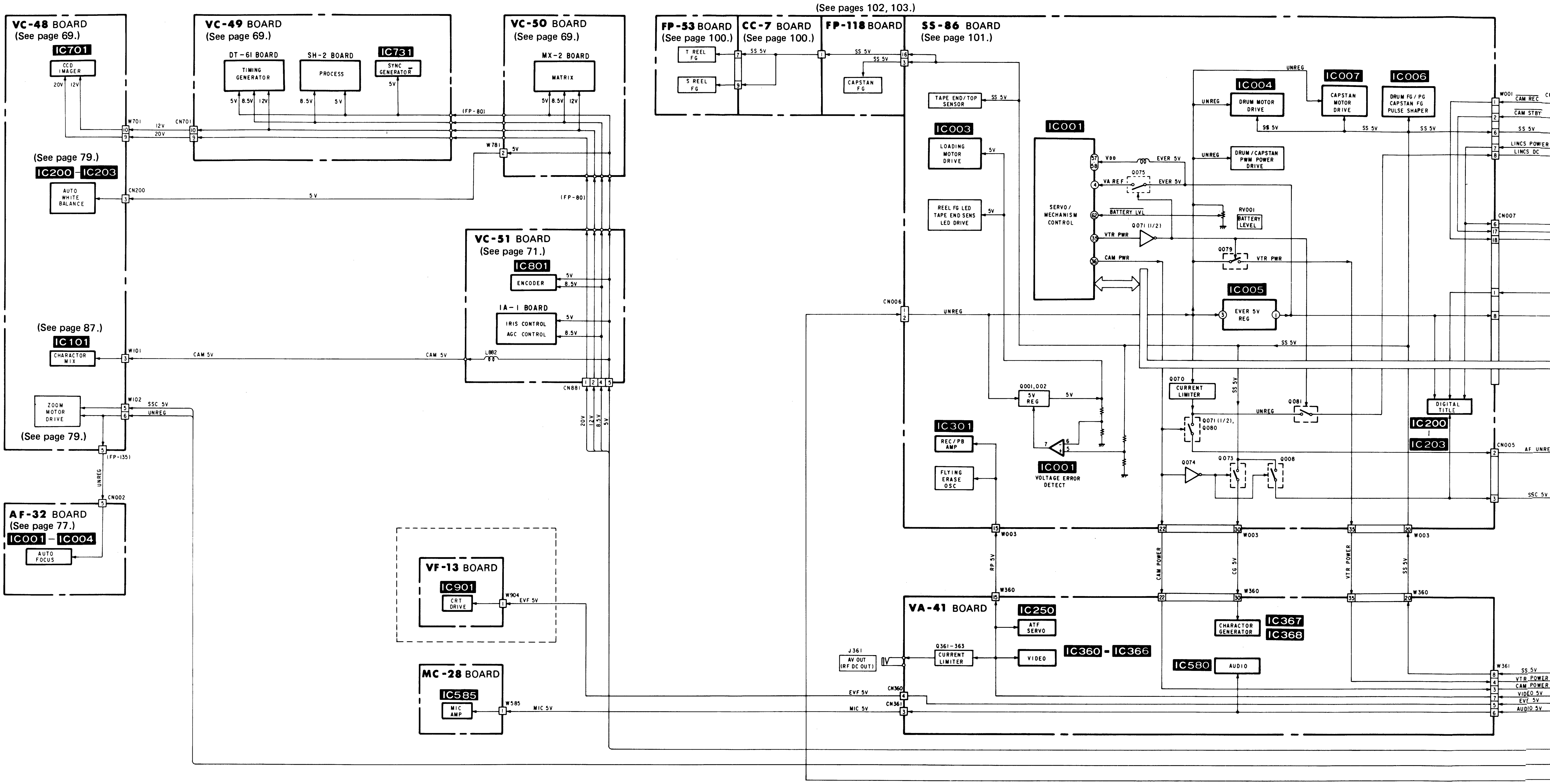
- Components on the rear side indicated by "- - -" line.

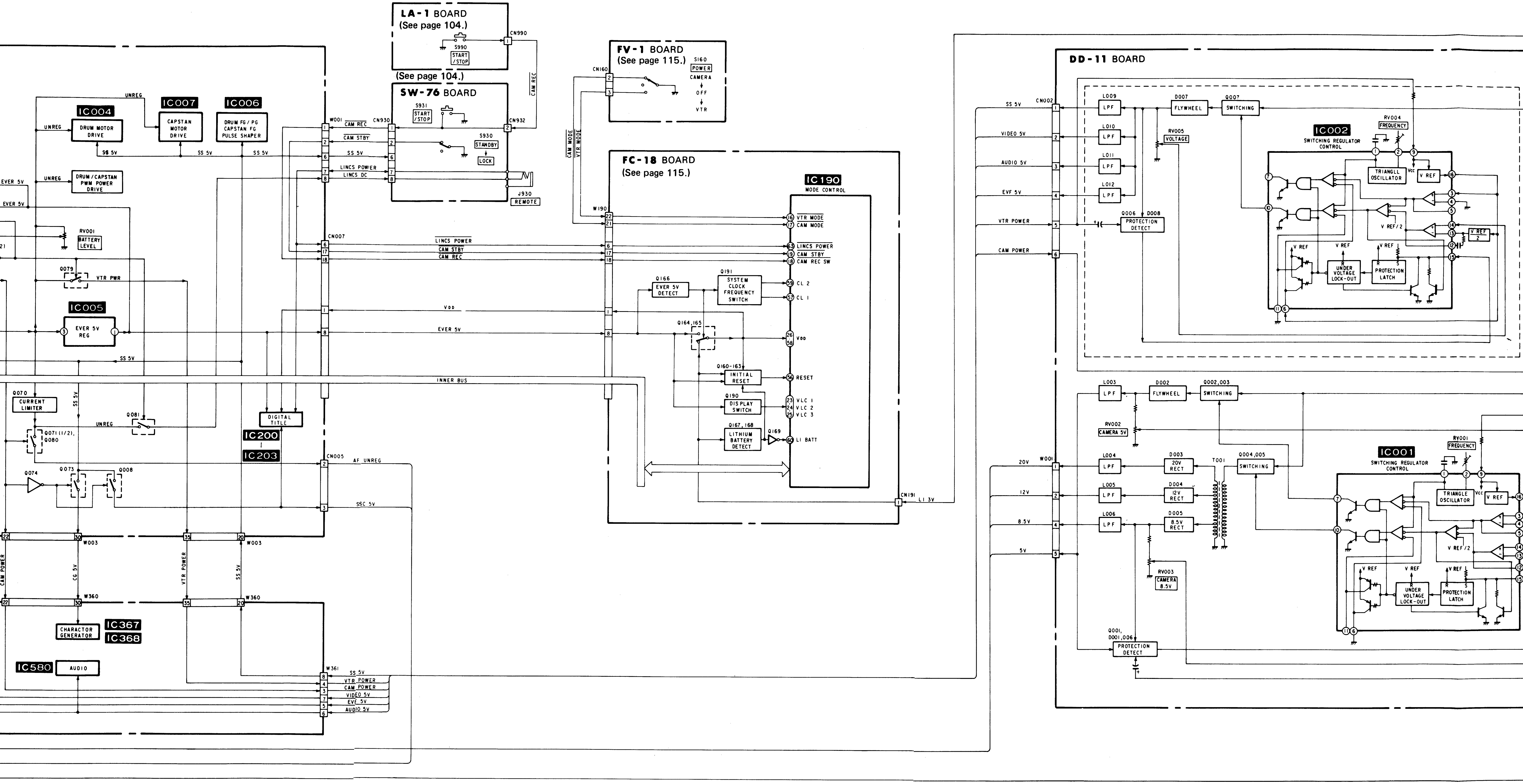

VIDEO BLOCK
DR
VIDEO HEAD
CH1
CH2
CN003
SS-86 BOARD (VIDEO)
(See page 95.)
IC301
REC/PB AMP
0.7Vp-p
H
IC301 ⑯ PB
Q320
PB AMP/ HEAD SW
BUFFER
REC AMP
Y/C/AFM/AFT MIX
REC Y RF
REC C RF
REC AFM RF
PB RF
REC AMP RF
W003
W360
3.6Vp-p
IC301 ㉘, ㉝ REC
VA-41 BOARD (AUDIO) (See page 96.)
IC580
FM MOD/DEMOD NOISE REDUCTION
PB RF
FL580
1.5MHz BPF
Q580
RF AMP
PB AMP
LIMITER
EMPH SW
MIC
LINE
REC/PB AUDIO
MOA
REC
PB
DROP OUT DETECTOR
φ COMP (FM DEMOD)
LIMITER
HOLD 1
AGC AMP
AGC DET
WEIGTING FILTER
DET
DO
MUTE
EMPHASIS-2
V/I CONV
VCA
VCO (FM MOD)
EMPHASIS-1
LPF
HOLD 2
MUTE DET
MUTE
BUFFER
5dB AMP
PG DOUBLER
Q581
BUFFER
REC AFM
Q58
AUDI MUTE

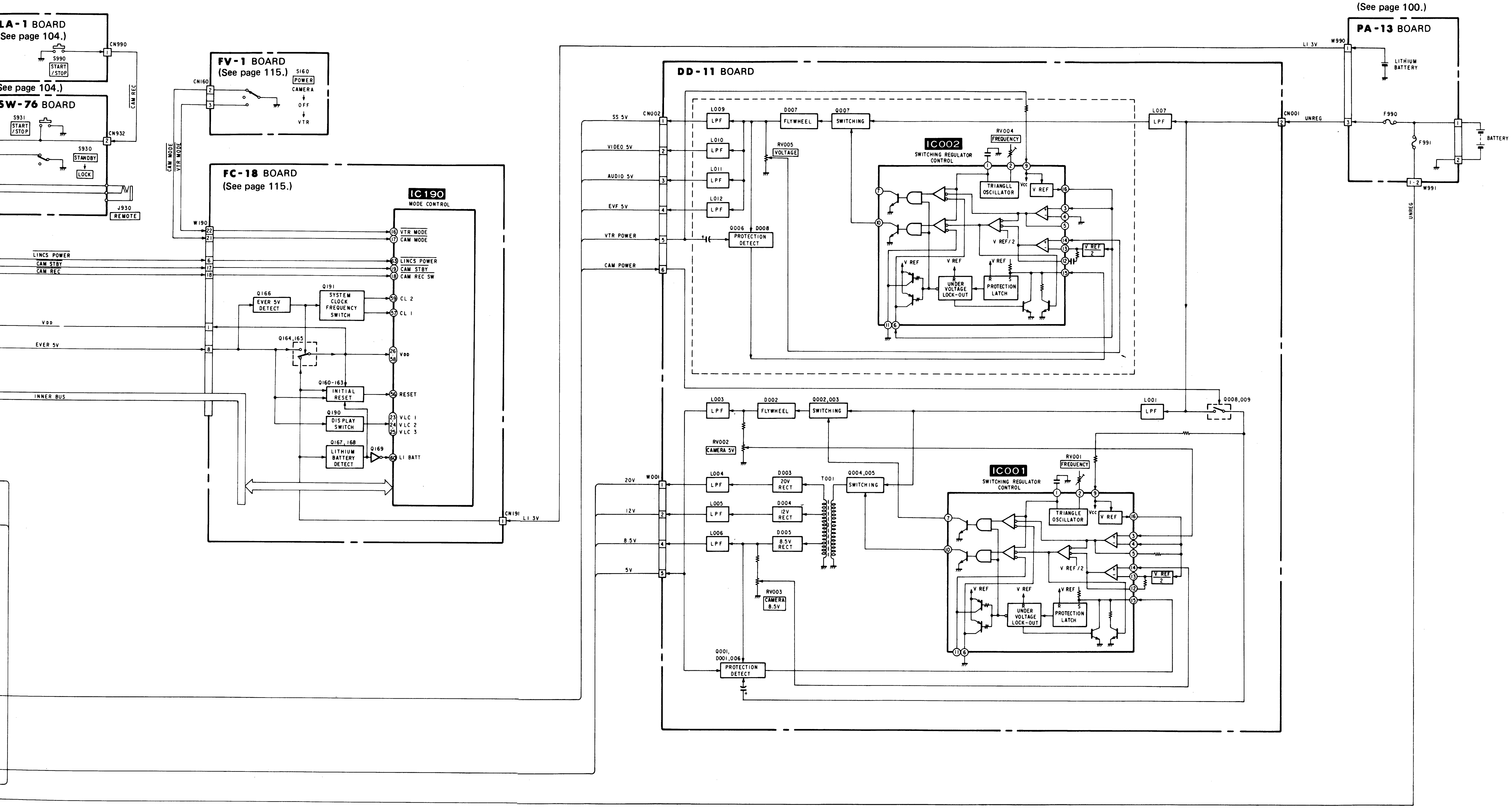

VA-41 BOARD (AUDIO) (See page 96.)
IC580
FM MOD/DEMOD NOISE REDUCTION
0.7Vp-p
PB RF
W360
FL580
1.5MHz BPF
Q580
RF AMP
REC AMP RF
W003
RF
PB AMP
LIMITER
DROP OUT DETECTOR
φ COMP (FM DEMOD)
HOLD 1
DO
PB
REC
EMPH SW
MIC
LINE
REC/PB AUDIO
MOA
REC
PB
LIMITER
AGC AMP
AGC DET
WEIGTING FILTER
DET
EMPHASIS-2
VCA
EMPHASIS-1
MUTE
V/I CONV
VCO (FM MOD)
LPF
HOLD 2
MUTE DET
PG DOUBLER
MUTE
BUFFER
5dB AMP
Q581
BUFFER
REC AFM
Q582
AUDIO MUTE
AUDIO 5V
MIC 5V
MIC IN
CN361
W585
J361
AV OUT (AUDIO)
EP OUT
A MUTE
VA, PB MODE
RF SWP
SERVO/SYSCON (SS-86)
MC-28 BOARD IC585 (See page 95.)
CURRENT PROTECTOR
EXT Vcc
Vcc
MIC AMP
Q585
LOW-CUT FILTER
MIC +B
MIC IN
CN585
MIC
MIC UNIT
SS-86 BOARD (See page 102.)
W003
W001
SW-76 BOARD (See page 104.)
EP OUT
CN930
J931
EARPHONE

3-14. POWER SUPPLY BLOCK DIAGRAM

- ( ) near the board name indicates the schematic diagram page.

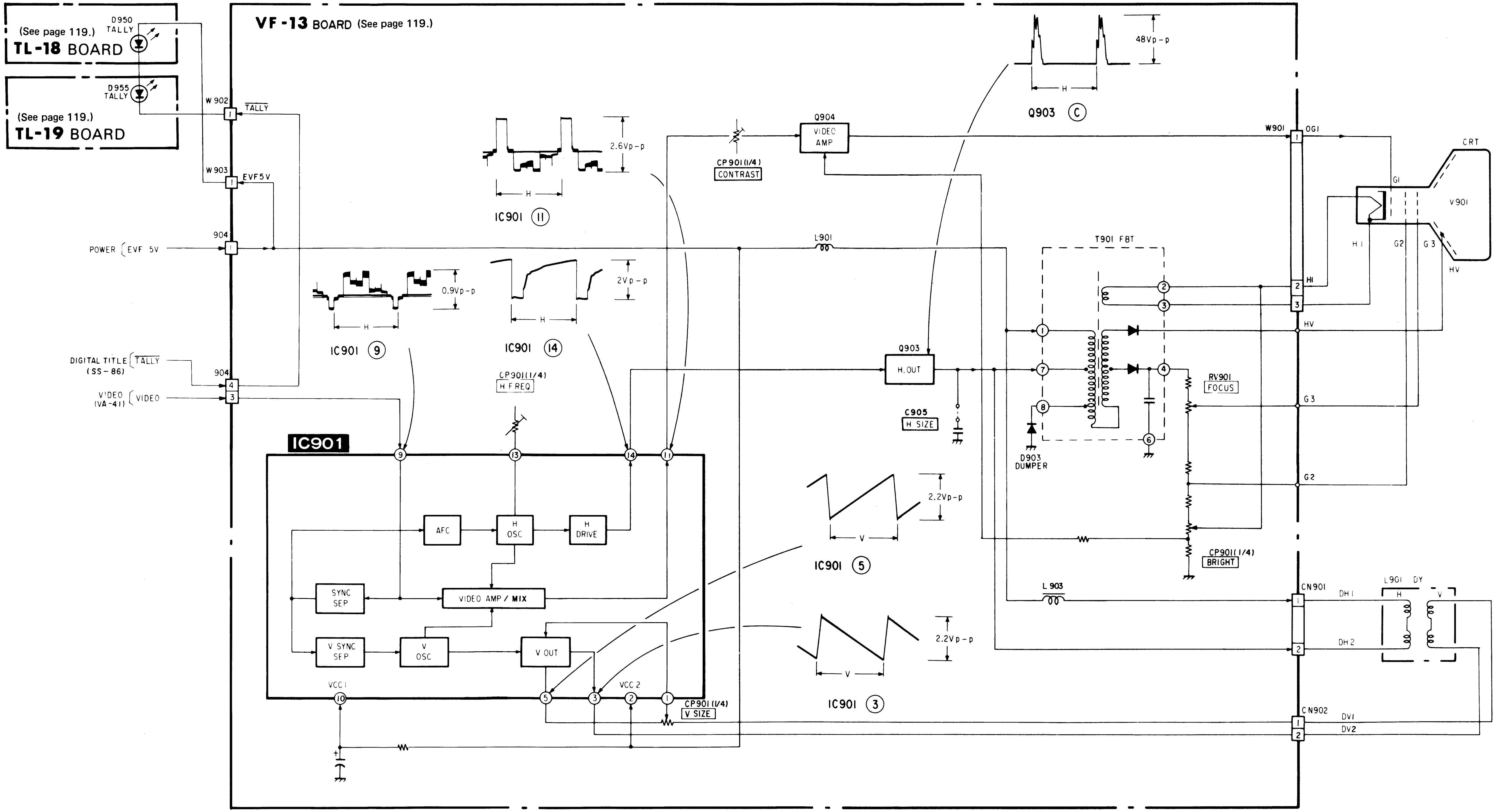

VC-48 BOARD
(See page 69.)
IC701
CCD IMAGER
20V
12V
W701
12V
20V
(See page 79.)
IC200 - IC203
AUTO WHITE BALANCE
CN200
5V
(See page 87.)
IC101
CHARACTOR MIX
W101
CAM 5V
ZOOM MOTOR DRIVE
W102
SSC 5V
UNREG
(See page 79.)
(FP-135)
UNREG
CN002
AF-32 BOARD
(See page 77.)
IC001 - IC004
AUTO FOCUS
VC-49 BOARD
(See page 69.)
CN701
DT-61 BOARD
TIMING GENERATOR
SH-2 BOARD
PROCESS
IC731
SYNC GENERATOR
5V
8.5V
12V
(FP-80)
VC-50 BOARD
(See page 69.)
MX-2 BOARD
MATRIX
W781
5V
(FP-80)
VC-51 BOARD
(See page 71.)
IC801
ENCODER
IA-1 BOARD
IRIS CONTROL
AGC CONTROL
8.5V
CAM 5V
L882
CN881
20V
12V
8.5V
5V
VF-13 BOARD
IC901
CRT DRIVE
W904
EVF 5V
MC-28 BOARD
IC585
MIC AMP
W585
MIC 5V
(See pages 102, 103.)
FP-53 BOARD
(See page 100.)
T REEL FG
S REEL FG
CC-7 BOARD
(See page 100.)
SS 5V
FP-118 BOARD
CAPSTAN FG
SS-86 BOARD
(See page 101.)
TAPE END/TOP SENSOR
IC003
LOADING MOTOR DRIVE
REEL FG LED TAPE END SENS LED DRIVE
IC001
SERVO/MECHANISM CONTROL
VDD
EVER 5V
VA REF
Q075
BATTERY LVL
Q071 (1/2)
VTR PWR
CAM PWR
UNREG
IC004
DRUM MOTOR DRIVE
DRUM/CAPSTAN PWM POWER DRIVE
RV001
BATTERY LEVEL
Q079
IC007
CAPSTAN MOTOR DRIVE
IC006
DRUM FG/PG CAPSTAN FG PULSE SHAPER
IC005
EVER 5V REG
CN006
W001
CAM REC
CAM STBY
LINCS POWER
LINCS DC
CN007
Q001,002
5V REG
IC301
REC/PB AMP
FLYING ERASE OSC
IC001
VOLTAGE ERROR DETECT
Q070
CURRENT LIMITER
Q071 (1/2), Q080
Q081
Q074
Q073
Q008
DIGITAL TITLE
IC200 - IC203
CN005
AF UNREG
SSC 5V
W003
RP 5V
CAM POWER
CG 5V
VTR POWER
W360
VA-41 BOARD
IC250
ATF SERVO
VIDEO
IC360 - IC366
Q361-363
CURRENT LIMITER
J361
AV OUT (RF DC OUT)
CHARACTOR GENERATOR
IC367
IC368
IC580
AUDIO
EVF 5V
MIC 5V
CN360
CN361
W361
VIDEO 5V
AUDIO 5V

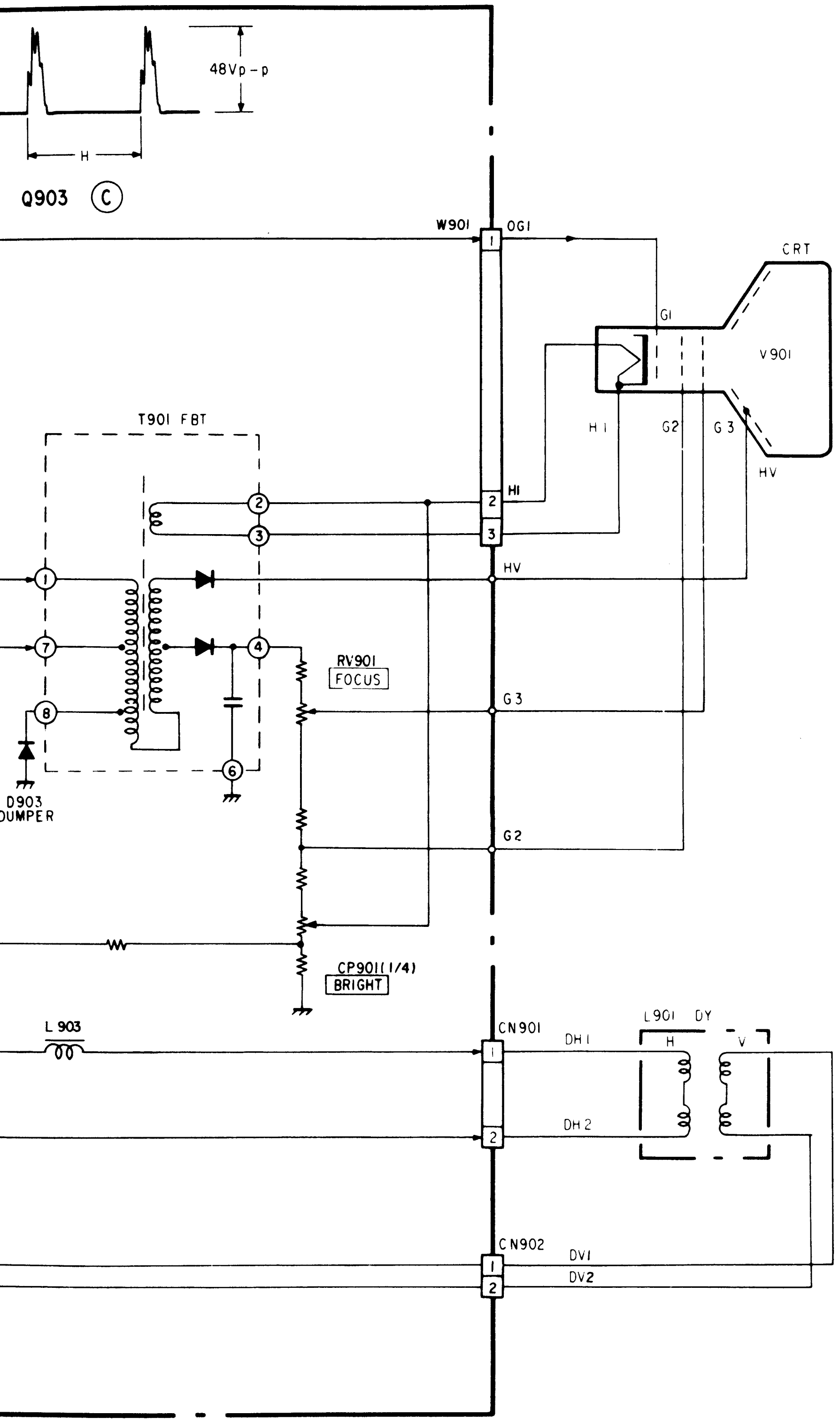

LA-1 BOARD
(See page 104.)
S990
START/STOP
CN990
CAM REC
(See page 104.)
SW-76 BOARD
S931
START/STOP
S930
STANDBY
LOCK
CN930
CN932
J930
REMOTE
FV-1 BOARD
(See page 115.)
S160
POWER
CAMERA
OFF
VTR
CN160
CAM MODE
VTR MODE
FC-18 BOARD
(See page 115.)
IC190
MODE CONTROL
W190
VTR MODE
CAM MODE
LINCS POWER
CAM STBY
CAM REC SW
Q166
EVER 5V DETECT
Q191
SYSTEM CLOCK FREQUENCY SWITCH
CL 2
CL 1
Q164,165
VDD
Q160-163
INITIAL RESET
RESET
Q190
DISPLAY SWITCH
VLC 1
VLC 2
VLC 3
Q167,168
LITHIUM BATTERY DETECT
Q169
LI BATT
CN191
LI 3V
UNREG
IC004
DRUM MOTOR DRIVE
IC007
CAPSTAN MOTOR DRIVE
IC006
DRUM FG/PG CAPSTAN FG PULSE SHAPER
SS 5V
DRUM/CAPSTAN PWM POWER DRIVE
EVER 5V
RV001
BATTERY LEVEL
Q079
VTR PWR
IC005
EVER 5V REG
W001
CAM REC
CAM STBY
SS 5V
LINCS POWER
LINCS DC
CN007
VDD
EVER 5V
INNER BUS
Q070
CURRENT LIMITER
Q081
Q071(1/2), Q080
Q074
Q073
Q008
DIGITAL TITLE
IC200
IC203
CN005
AF UNREG
SSC 5V
W003
CAM POWER
CG 5V
VTR POWER
W360
CHARACTOR GENERATOR
IC367
IC368
IC580
AUDIO
W361
SS 5V
VTR POWER
CAM POWER
VIDEO 5V
EVF 5V
AUDIO 5V
DD-11 BOARD
CN002
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
L009
L010
L011
L012
LPF
D007
FLYWHEEL
Q007
SWITCHING
RV005
VOLTAGE
Q006 D008
PROTECTION DETECT
IC002
SWITCHING REGULATOR CONTROL
RV004
FREQUENCY
TRIANGLL OSCILLATOR
V REF
V REF/2
UNDER VOLTAGE LOCK-OUT
PROTECTION LATCH
L003
D002
FLYWHEEL
Q002,003
SWITCHING
RV002
CAMERA 5V
W001
20V
12V
8.5V
5V
L004
L005
L006
D003
20V RECT
D004
12V RECT
D005
8.5V RECT
T001
Q004,005
SWITCHING
RV003
CAMERA 8.5V
IC001
SWITCHING REGULATOR CONTROL
RV001
FREQUENCY
TRIANGLE OSCILLATOR
V REF
V REF/2
UNDER VOLTAGE LOCK-OUT
PROTECTION LATCH
Q001, D001,006
PROTECTION DETECT


LA-1 BOARD
See page 104.)
S990
START /STOP
CN990
See page 104.)
SW-76 BOARD
S931
START /STOP
CN932
S930
STANDBY
LOCK
J930
REMOTE
CAM REC
FV-1 BOARD
(See page 115.)
S160
POWER
CAMERA
OFF
VTR
CN160
CAM MODE
VTR MODE
FC-18 BOARD
(See page 115.)
IC190
MODE CONTROL
W190
VTR MODE
CAM MODE
LINCS POWER
CAM STBY
CAM REC
CAM REC SW
Q166
EVER 5V DETECT
Q191
SYSTEM CLOCK FREQUENCY SWITCH
CL 2
CL 1
VDD
EVER 5V
Q164,165
Q160-163
INITIAL RESET
RESET
INNER BUS
Q190
DISPLAY SWITCH
VLC 1
VLC 2
VLC 3
Q167,168
LITHIUM BATTERY DETECT
Q169
LI BATT
CN191
LI 3V
DD-11 BOARD
CN002
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
L009
L010
L011
L012
LPF
D007
FLYWHEEL
Q007
SWITCHING
RV005
VOLTAGE
Q006
D008
PROTECTION DETECT
IC002
SWITCHING REGULATOR CONTROL
RV004
FREQUENCY
TRIANGLL OSCILLATOR
Vcc
V REF
V REF/2
V REF/2
UNDER VOLTAGE LOCK-OUT
PROTECTION LATCH
R
S
L007
CN001
UNREG
L003
D002
Q002,003
L001
Q008,009
RV002
CAMERA 5V
W001
20V
12V
8.5V
5V
L004
L005
L006
D003
20V RECT
D004
12V RECT
D005
8.5V RECT
T001
Q004,005
RV003
CAMERA 8.5V
IC001
RV001
TRIANGLE OSCILLATOR
Q001, D001,006
(See page 100.)
PA-13 BOARD
W990
LI 3V
LITHIUM BATTERY
F990
F991
BATTERY
W991
UNREG

3-15. VIEW FINDER BLOCK DIAGRAM

• ( ) near the board name indicates the schematic diagram page.


(See page 119.)
TL-18 BOARD
D950
TALLY
D955
TALLY
(See page 119.)
TL-19 BOARD
VF-13 BOARD (See page 119.)
W 902
TALLY
W 903
EVF5V
904
POWER (EVF 5V
DIGITAL TITLE (TALLY
(SS-86)
VIDEO (VIDEO
(VA-41)
904
2.6Vp-p
H
IC901 ⑪
0.9Vp-p
H
IC901 ⑨
2Vp-p
H
IC901 ⑭
CP901(1/4)
H FREQ
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP / MIX
V SYNC SEP
V OSC
V OUT
VCC 1
VCC 2
CP901 (1/4)
V SIZE
CP901(1/4)
CONTRAST
Q904
VIDEO AMP
L901
48Vp-p
H
Q903 Ⓒ
Q903
H.OUT
C905
H SIZE
D903
DUMPER
T901 FBT
RV901
FOCUS
CP901(1/4)
BRIGHT
2.2Vp-p
V
IC901 ⑤
2.2Vp-p
V
IC901 ③
L 903
W901
OG1
HI
HV
G3
G2
CRT
G1
V901
H1
G2
G3
HV
CN901
DH1
DH2
L901 DY
H
V
CN902
DV1
DV2

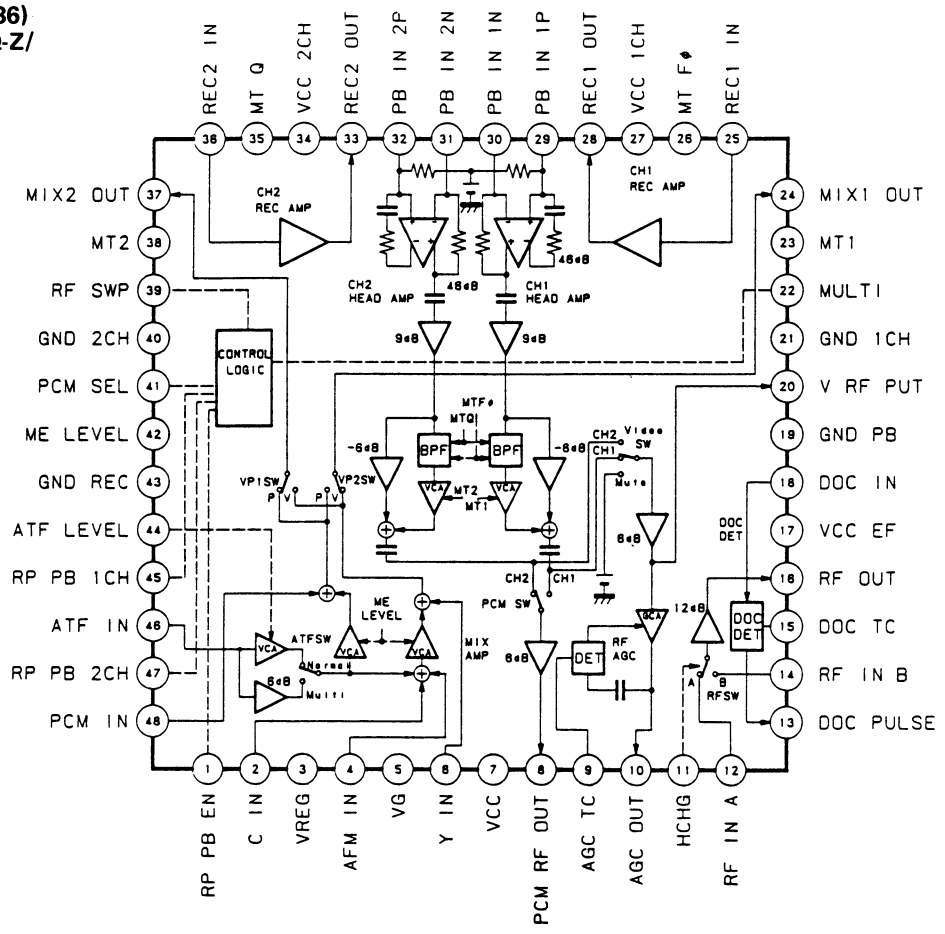

48Vp-p
H
Q903 ©
W901
OG1
CRT
V901
G1
H1
G2
G3
HV
T901 FBT
HI
RV901
FOCUS
G3
G2
D903
DUMPER
CP901(1/4)
BRIGHT
L903
CN901
DH1
DH2
L901 DY
H
V
CN902
DV1
DV2

SECTION 4

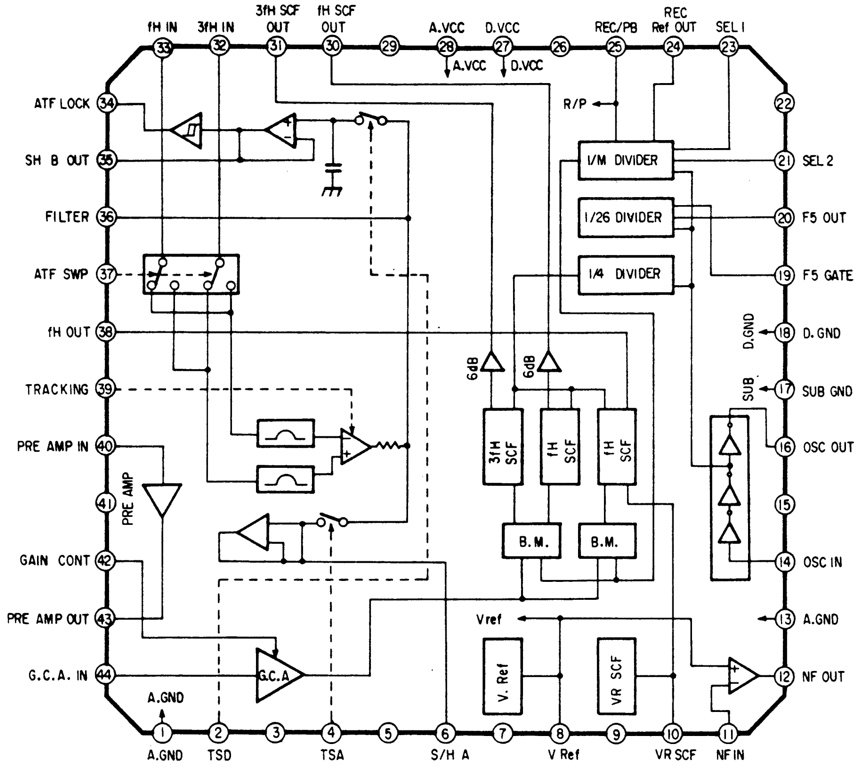
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

• VIDEO/AUDIO BLOCK IC BLOCK DIAGRAMS

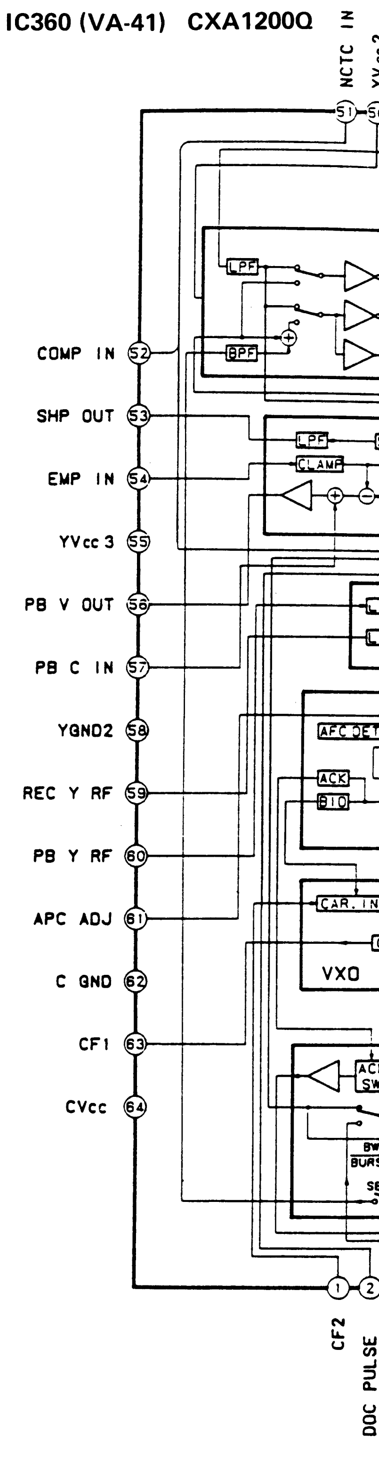
**IC301 (SS-86)
CXA1202Q-Z/
CXA1202R**


REC2 IN
MT Q
VCC 2CH
REC2 OUT
PB IN 2P
PB IN 2N
PB IN 1N
PB IN 1P
REC1 OUT
VCC 1CH
MT F∅
REC1 IN
MIX2 OUT
MT2
RF SWP
GND 2CH
PCM SEL
ME LEVEL
GND REC
ATF LEVEL
RP PB 1CH
ATF IN
RP PB 2CH
PCM IN
MIX1 OUT
MT1
MULTI
GND 1CH
V RF PUT
GND PB
DOC IN
VCC EF
RF OUT
DOC TC
RF IN B
DOC PULSE
RP PB EN
C IN
VREG
AFM IN
VG
Y IN
VCC
PCM RF OUT
AGC TC
AGC OUT
HCHG
RF IN A
CH2 REC AMP
CH1 REC AMP
CH2 HEAD AMP
CH1 HEAD AMP
48dB
9dB
CONTROL LOGIC
MTF∅
MTQ1
BPF
-6dB
VP1SW
VP2SW
VCA
MT2
MT1
CH2 Video CH1 SW
Mute
6dB
ME LEVEL
ATFSW
Normal
Multi
MIX AMP
PCM SW
DET
RF AGC
12dB
DOC DET
RFSW

**IC250 (VA-41)
CXA1204Q**


fH IN
3fH IN
3fH SCF OUT
fH SCF OUT
A.VCC
D.VCC
REC/PB
REC Ref OUT
SEL1
ATF LOCK
SH B OUT
FILTER
ATF SWP
fH OUT
TRACKING
PRE AMP IN
GAIN CONT
PRE AMP OUT
G.C.A. IN
R/P
1/M DIVIDER
1/26 DIVIDER
1/4 DIVIDER
SEL 2
F5 OUT
F5 GATE
D.GND
SUB GND
OSC OUT
OSC IN
A.GND
NF OUT
6dB
3fH SCF
fH SCF
B.M.
PRE AMP
G.C.A
Vref
V. Ref
VR SCF
A.GND
TSD
TSA
S/H A
V Ref
VR SCF
NF IN

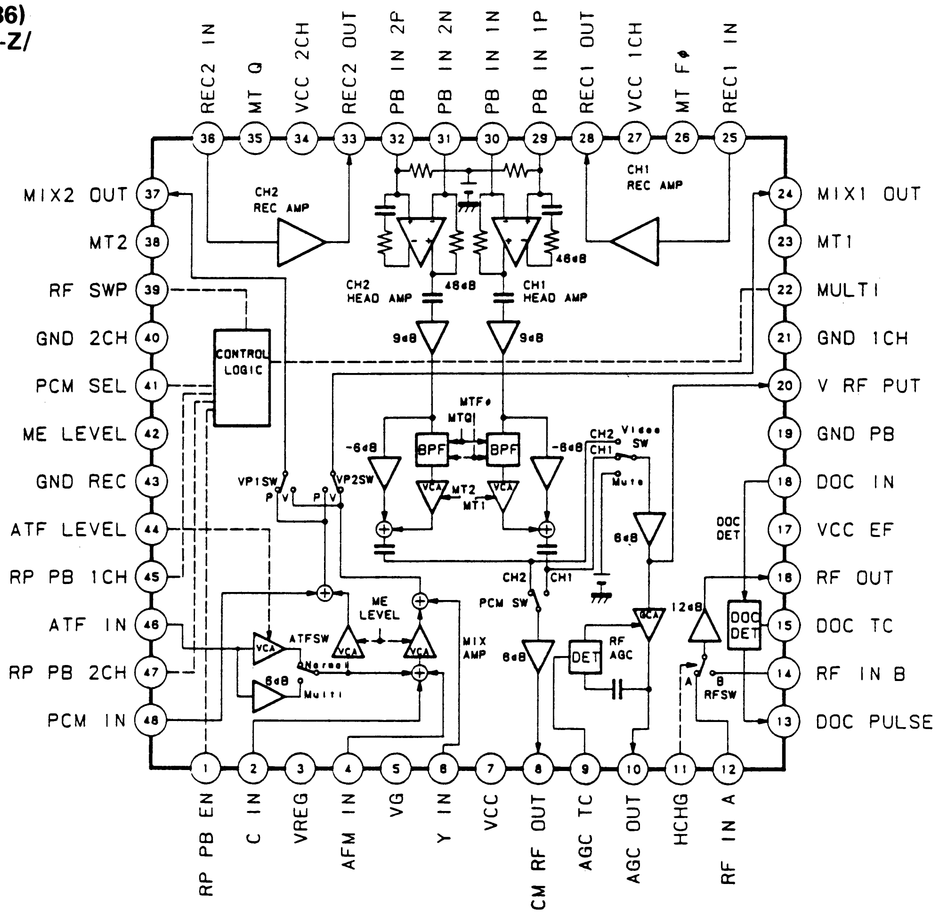
IC360 (VA-41) CXA1200Q


NCTC IN
COMP IN
SHP OUT
EMP IN
YVcc 3
PB V OUT
PB C IN
YGND2
REC Y RF
PB Y RF
APC ADJ
C GND
CF1
CVcc
LPF
BPF
CLAMP
AFC DET
ACK
BTO
CAR. IN
VXO
CF2
DOC PULSE

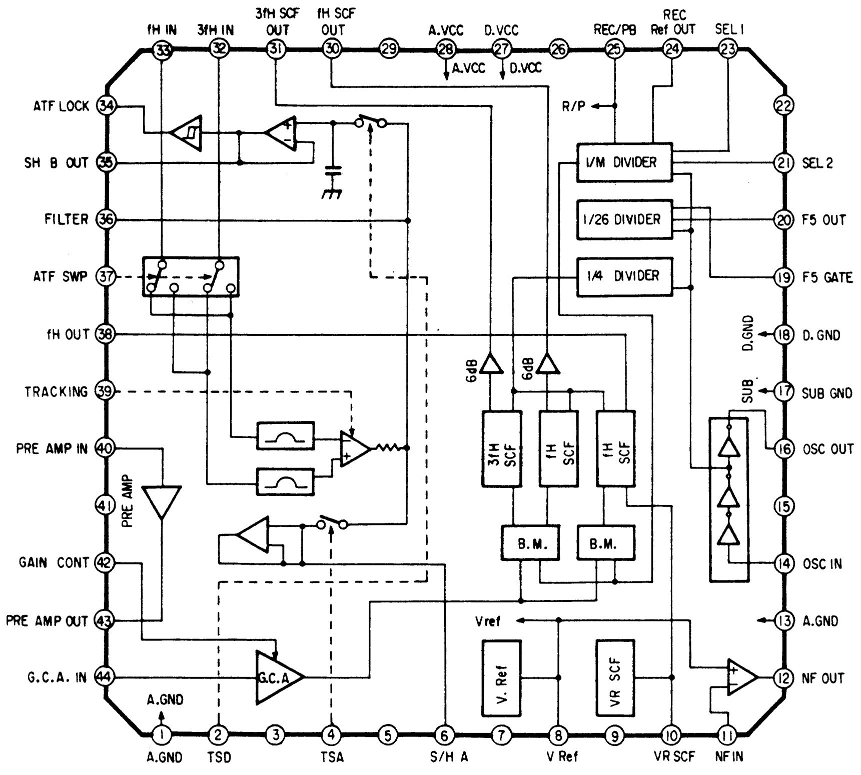
SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- **VIDEO/AUDIO BLOCK IC BLOCK DIAGRAMS**

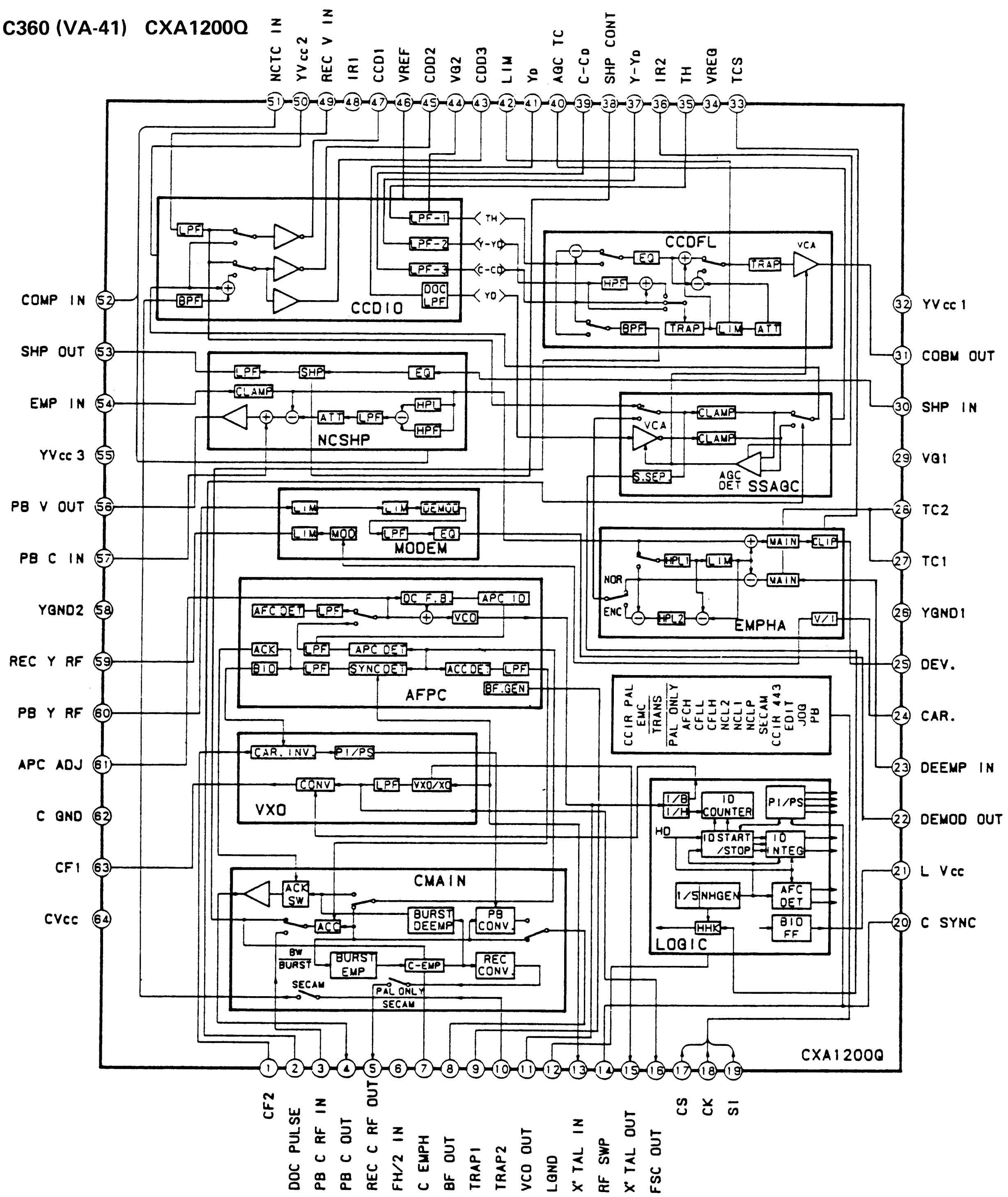
IC301 (SS-86)
CXA1202Q-Z/
CXA1202R


REC2 IN
MT Q
VCC 2CH
REC2 OUT
PB IN 2P
PB IN 2N
PB IN 1N
PB IN 1P
REC1 OUT
VCC 1CH
MT F
REC1 IN
MIX2 OUT
MT2
RF SWP
GND 2CH
PCM SEL
ME LEVEL
GND REC
ATF LEVEL
RP PB 1CH
ATF IN
RP PB 2CH
PCM IN
MIX1 OUT
MT1
MULTI
GND 1CH
V RF PUT
GND PB
DOC IN
VCC EF
RF OUT
DOC TC
RF IN B
DOC PULSE
RP PB EN
C IN
VREG
AFM IN
VG
Y IN
VCC
PCM RF OUT
AGC TC
AGC OUT
HCHG
RF IN A
CH2 REC AMP
CH1 REC AMP
CH2 HEAD AMP
CH1 HEAD AMP
46dB
9dB
CONTROL LOGIC
MTF
MTQ
BPF
-6dB
VP1SW
VP2SW
MT2
MT1
Video SW
Mute
DOC DET
ME LEVEL
PCM SW
ATFSW
VCA
MIX AMP
RF AGC
DET
12dB
RFSW
6dB
Multi

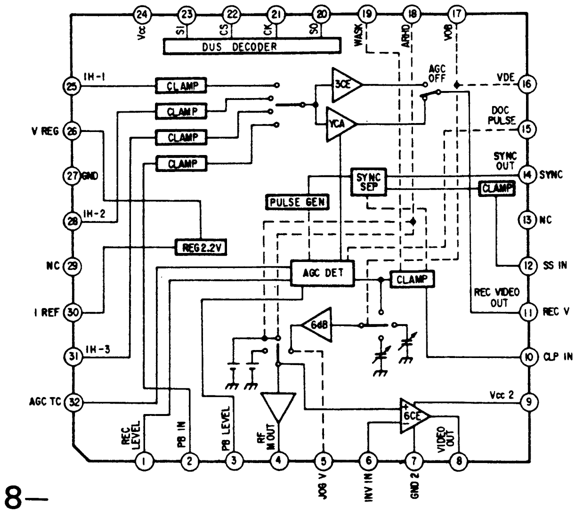
IC250 (VA-41)
CXA1204Q


fH IN
3fH IN
3fH SCF OUT
fH SCF OUT
A.VCC
D.VCC
REC/PB
REC Ref OUT
SEL1
ATF LOCK
SH B OUT
FILTER
ATF SWP
fH OUT
TRACKING
PRE AMP IN
GAIN CONT
PRE AMP OUT
G.C.A. IN
SEL 2
F5 OUT
F5 GATE
D.GND
SUB GND
OSC OUT
OSC IN
A.GND
NF OUT
R/P
1/M DIVIDER
1/26 DIVIDER
1/4 DIVIDER
6dB
3fH SCF
fH SCF
B.M.
PRE AMP
G.C.A.
V. Ref
VR SCF
Vref
SUB
A.GND
TSD
TSA
S/H A
V Ref
VR SCF
NF IN

IC360 (VA-41) CXA1200Q


NCTC IN
YVcc 2
REC V IN
IR1
CCD1
VREF
CDD2
VG2
CDD3
LIM
Yo
AGC TC
C-Co
SHP CONT
Y-Yo
IR2
TH
VREG
TCS
COMP IN
SHP OUT
EMP IN
YVcc 3
PB V OUT
PB C IN
YGND2
REC Y RF
PB Y RF
APC ADJ
C GND
CF1
CVcc
YVcc 1
COBM OUT
SHP IN
VG1
TC2
TC1
YGND1
DEV.
CAR.
DEEMP IN
DEMOD OUT
L Vcc
C SYNC
CF2
DOC PULSE
PB C RF IN
PB C OUT
REC C RF OUT
FH/2 IN
C EMPH
BF OUT
TRAP1
TRAP2
VCO OUT
LGND
X'TAL IN
RF SWP
X'TAL OUT
FSC OUT
CS
CK
SI
LPF
BPF
LPF-1
LPF-2
LPF-3
DOC LPF
TH
Y-YO
C-CO
YO
CCD10
CCDFL
EQ
HPS
TRAP
LIM
ATT
VCA
SHP
CLAMP
HPL
HPF
NCSHP
SSAGC
S.SEP
AGC DET
DEMOD
MOD
MODEM
MAIN
CLIP
NOR
ENC
HPL2
EMPHA
V/I
AFC DET
DC F.B.
APC ID
VCO
ACK
APC DET
BIO
SYNC DET
ACC DET
BF GEN
AFPC
CCIR PAL
EMC
TRANS
PAL ONLY
AFCH
CFLL
CFLH
NCL1
NCL2
NCLP
SECAM
CCIR 443
EDIT
JOG
PB
CAR. INV
P1/PS
CONV
VXO/XO
VXO
1/8
1/H
ID COUNTER
HD
ID START/STOP
ID INTEG
CMAIN
ACK SW
ACC
BURST DEEMP
PB CONV.
BW
BURST
BURST EMP
C-EMP
REC CONV.
SECAM
PAL ONLY
1/SNHGEN
HHK
AFC DET
BIO FF
LOGIC
CXA1200Q

IC362 (VA-41)
CXA1201Q


Vcc
SI
CS
CK
SO
WASK
ARHD
VOB
DUS DECODER
IH-1
V REG
GND
IH-2
NC
I REF
IH-3
AGC TC
CLAMP
3CE
YCA
AGC OFF
VDE
DOC PULSE
SYNC OUT
SYNC
SYNC SEP
PULSE GEN
NC
SS IN
REG2.2V
AGC DET
REC VIDEO OUT
REC V
CLP IN
6dB
Vcc 2
6CE
REC LEVEL
PB IN
PB LEVEL
RF M OUT
VIDEO OUT
JOG V
INV IN
GND 2

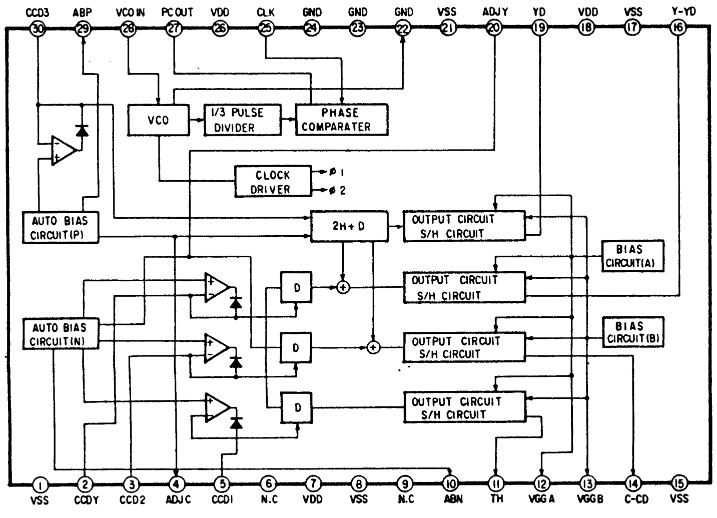
4-1. FRAME SCHEMATIC DIAGRAM

When indicating parts by reference number, please include the board name.

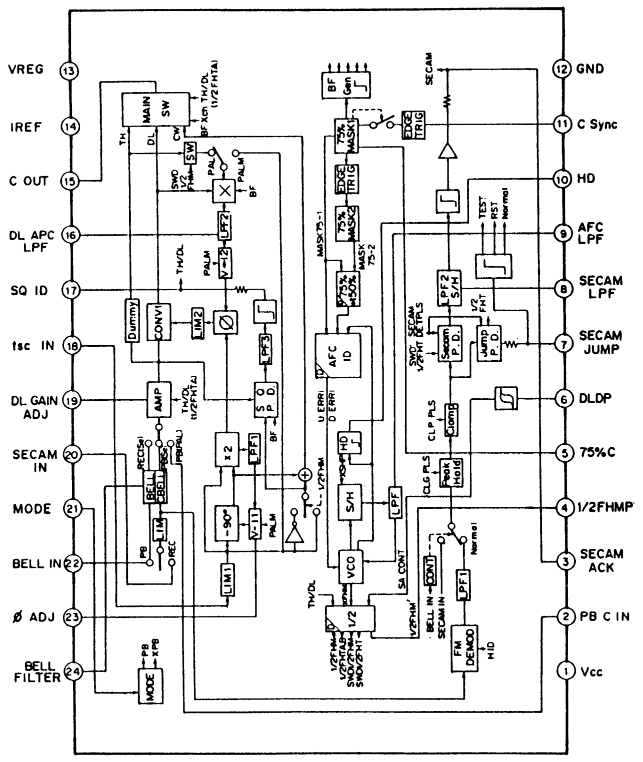
Precautions for replacement of CCD imager block.

- With a pair of IC701 (CCD imager) on the VC-48 complete board and IC002 (corrector ROM) on the DT-61 complete board, it is used a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager corrector ROM cannot be allowed.
- When both a CCD imager and the corrector ROM, replace both the CCD imager and the corrector ROM, when a corrector ROM is not mounted on the service set, install a corrector ROM which is supplied anew.
- IC701 (CCD imager) is not mounted on the VC-48 complete board to be supplied as a repair part, and IC002 (corrector ROM) is not mounted on the DT-61 complete board to be supplied as a repair part. When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new ones respectively.
- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

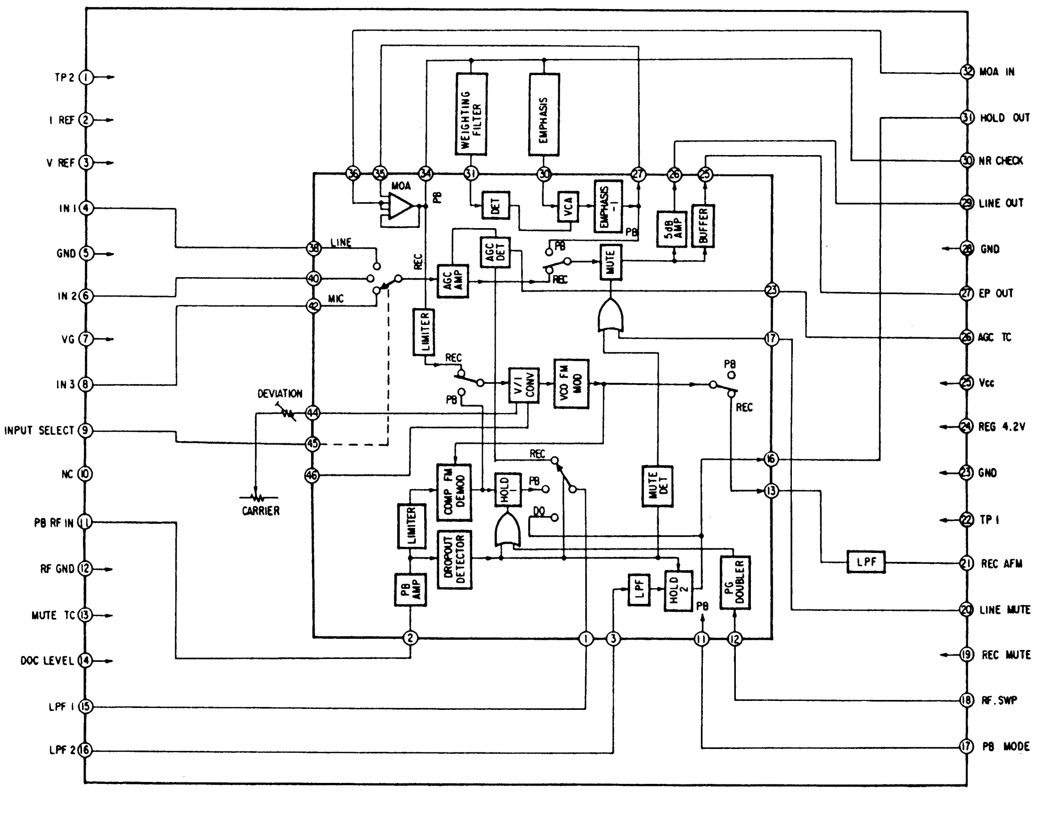
IC361 (VA-41) CXL1502

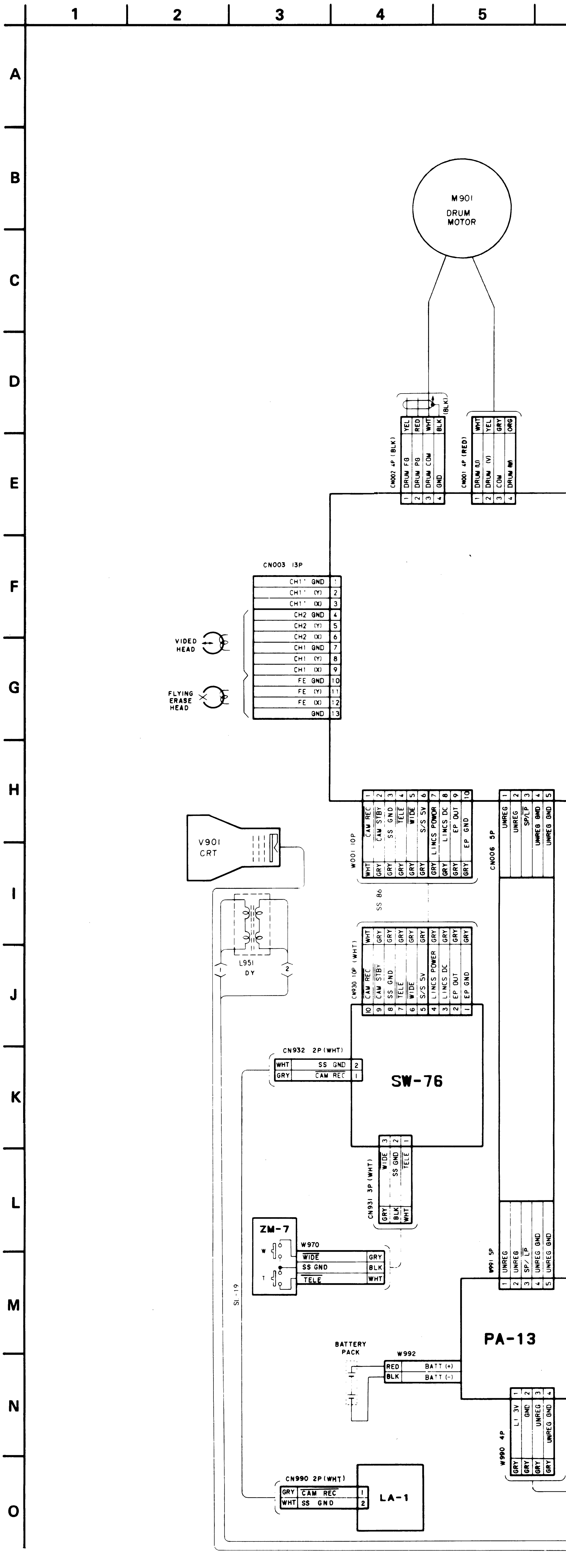

CCD3 ABP VCO IN PC OUT VDD CLK GND GND GND VSS ADJ Y YD VDD VSS Y-YD
VCO
1/3 PULSE DIVIDER
PHASE COMPARATER
CLOCK DRIVER
AUTO BIAS CIRCUIT(P)
AUTO BIAS CIRCUIT(N)
2H+D
OUTPUT CIRCUIT S/H CIRCUIT
BIAS CIRCUIT(A)
BIAS CIRCUIT(B)
D
VSS CCDY CCD2 ADJC CCD1 N.C VDD VSS N.C ABN TH VGGA VGGB C-CD VSS

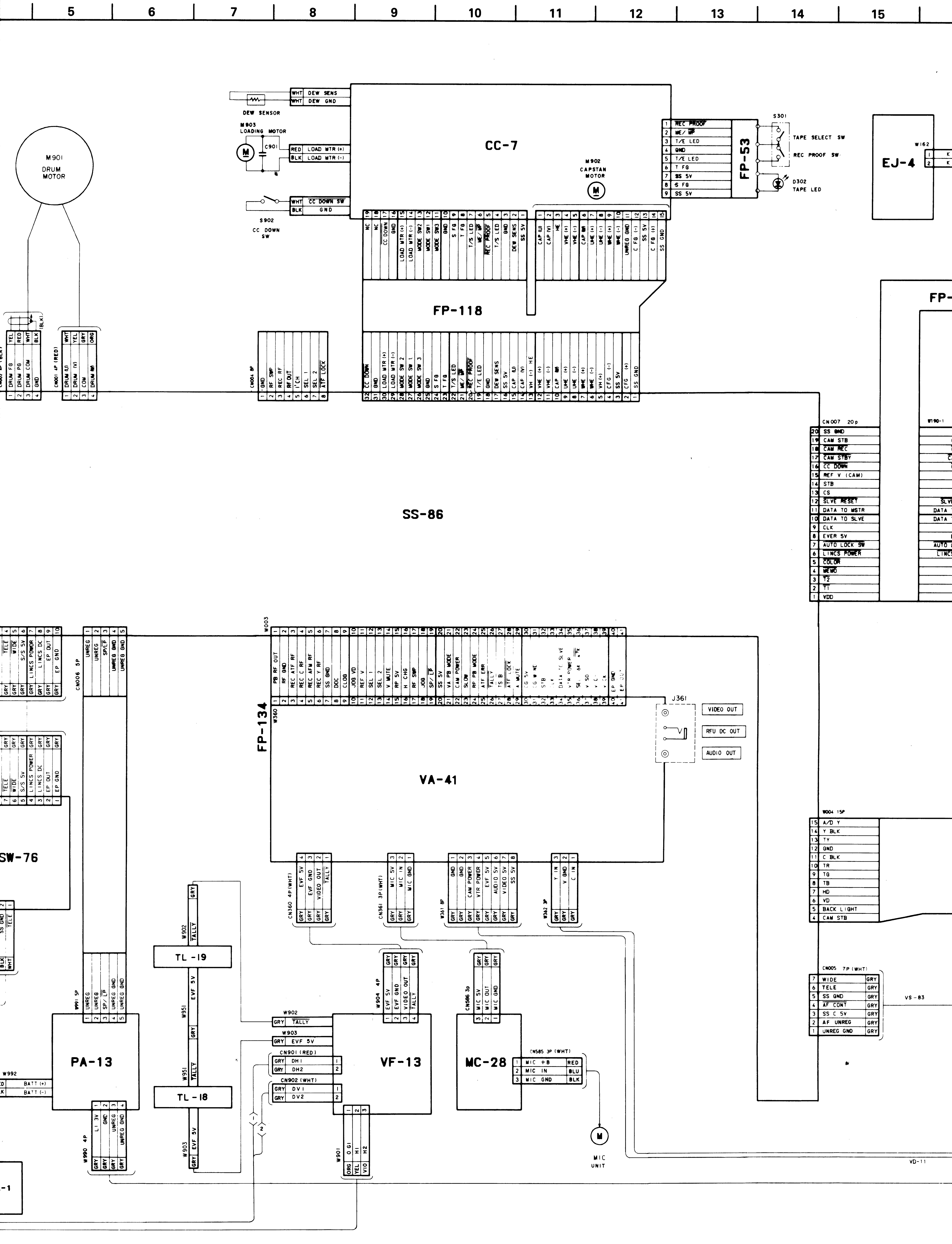
IC363 (VA-41) CXA1203M

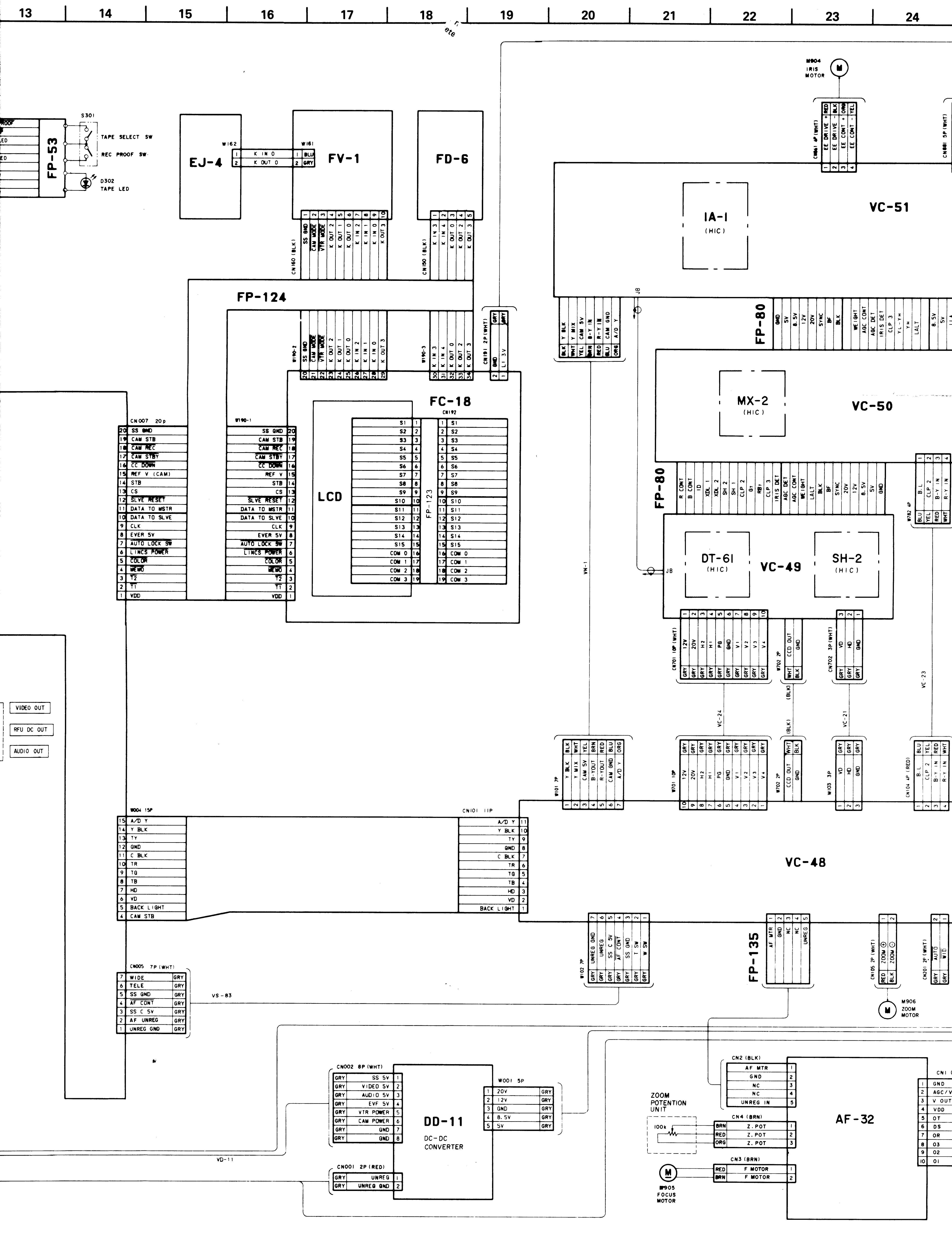

VREG
IREF
C OUT
DL APC LPF
SQ ID
fsc IN
DL GAIN ADJ
SECAM IN
MODE
BELL IN
ø ADJ
BELL FILTER
GND
C Sync
HD
AFC LPF
SECAM LPF
SECAM JUMP
DLDP
75%C
1/2FHMP
SECAM ACK
PB C IN
Vcc
MAIN SW
AFC ID
VCO
S/H
MODE

IC580 (VA-41) SBX1505-01/21

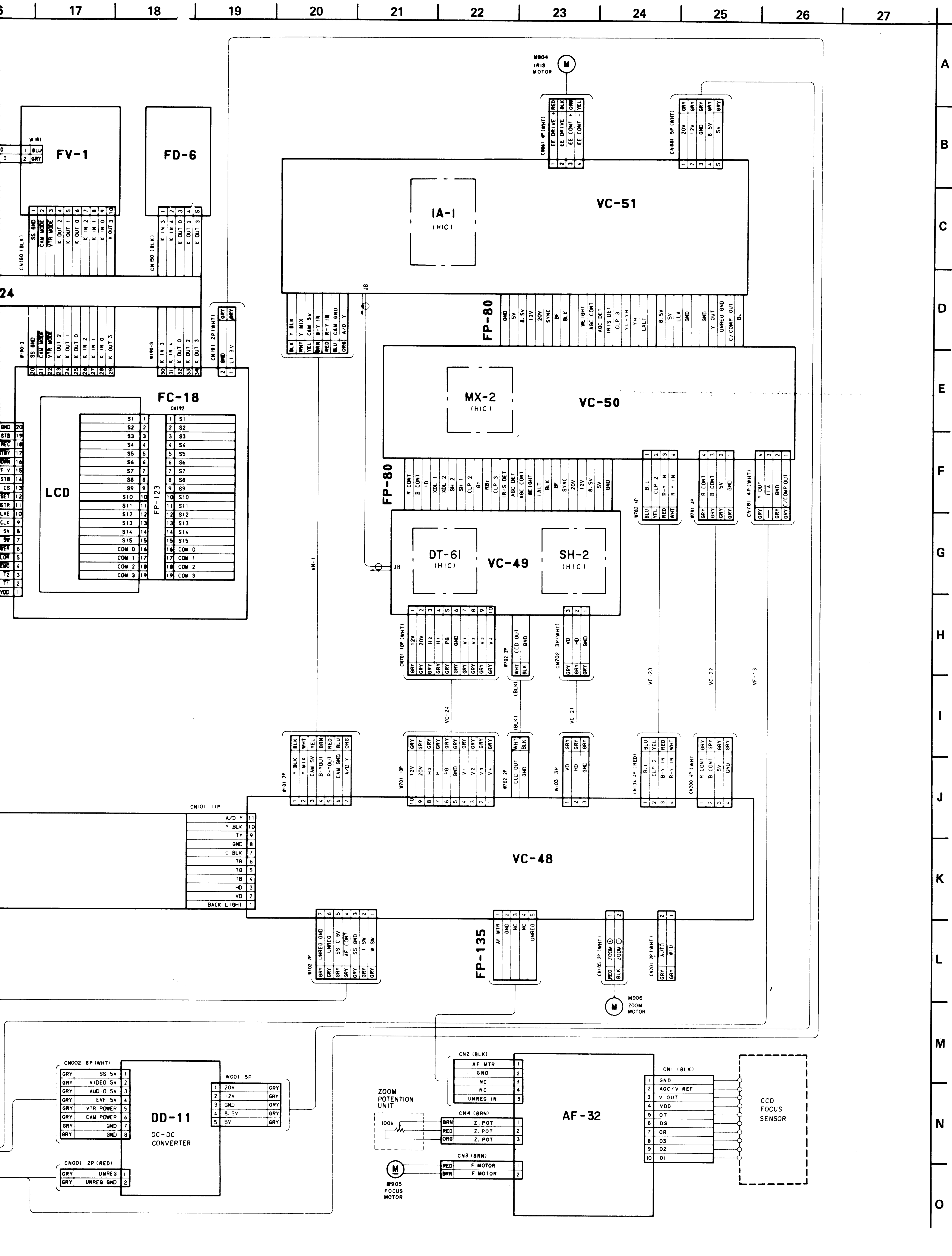

TP2
I REF
V REF
IN 1
GND
IN 2
VG
IN 3
INPUT SELECT
NC
PB RF IN
RF GND
MUTE TC
DOC LEVEL
LPF 1
LPF 2
MOA IN
HOLD OUT
NR CHECK
LINE OUT
GND
EP OUT
AGC TC
Vcc
REG 4.2V
GND
TP 1
REC AFM
LINE MUTE
REC MUTE
RF.SWP
PB MODE
WEIGHTING FILTER
EMPHASIS
MOA
DET
VCA
EMPHASIS -1
5dB AMP
BUFFER
AGC AMP
AGC DET
MUTE
LIMITER
V/I CONV
VCO FM MOD
DEVIATION
CARRIER
COMP FM DEMOD
DROPOUT DETECTOR
HOLD
PB AMP
LPF
PG DOUBLER
MUTE DET
LINE
MIC
REC
PB
DO


1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
M901 DRUM MOTOR
CN002 4P (BLK)
DRUM FG
DRUM PG
DRUM COM
GND
YEL
RED
WHT
BLK
CN001 4P (RED)
DRUM (U)
DRUM (V)
COM
DRUM (W)
CN003 13P
CH1' GND
CH1' (Y)
CH1' (X)
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
FE GND
FE (Y)
FE (X)
GND
VIDEO HEAD
FLYING ERASE HEAD
V901 CRT
L951 DY
W001 10P
CAM REC
CAM STBY
SS GND
TELE
WIDE
S/S 5V
LINCS POWER
LINCS DC
EP OUT
EP GND
SS 86
CN006 5P
UNREG
SP/LP
UNREG GND
CN930 10P (WHT)
CN932 2P (WHT)
SW-76
CN931 3P (WHT)
ZM-7
W970
SL-19
W991 5P
PA-13
BATTERY PACK
W992
BATT (+)
BATT (-)
W990 4P
LI 3V
CN990 2P (WHT)
LA-1


5
6
7
8
9
10
11
12
13
14
15
CC-7
FP-118
FP-53
EJ-4
SS-86
FP-134
VA-41
SW-76
TL-19
TL-18
PA-13
VF-13
MC-28
M901 DRUM MOTOR
M903 LOADING MOTOR
M902 CAPSTAN MOTOR
DEW SENSOR
S902 CC DOWN SW
S301
TAPE SELECT SW
REC PROOF SW
D302 TAPE LED
J361
VIDEO OUT
RFU DC OUT
AUDIO OUT
MIC UNIT
CN007 20P
W004 15P
CN005 7P (WHT)
VS-83
VD-11
CN001 4P (RED)
CN004 8P
CN006 5P
W003
W360
CN360 4P (WHT)
CN361 3P (WHT)
W361 8P
W342 3P
W902
W903
W951
W991 5P
W990 4P
W904 4P
CN596 3P
CN585 3P (WHT)
CN901 (RED)
CN902 (WHT)
W901
W992
W162
BATT (+)
BATT (-)


13
14
15
16
17
18
19
20
21
22
23
24
FP-53
S301
TAPE SELECT SW
REC PROOF SW
D302
TAPE LED
EJ-4
W162
K IN 0
K OUT 0
W161
BLU
GRY
FV-1
FD-6
CN160 (BLK)
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
CN150 (BLK)
K IN 3
K IN 4
K OUT 0
K OUT 2
K OUT 3
FP-124
W190-2
W190-3
CN191 2P (WHT)
GND
L1 3V
FC-18
CN192
LCD
FP-123
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
COM 0
COM 1
COM 2
COM 3
CN007 20p
W190-1
SS GND
CAM STB
CAM REC
CAM STBY
CC DOWN
REF V (CAM)
STB
CS
SLVE RESET
DATA TO MSTR
DATA TO SLVE
CLK
EVER 5V
AUTO LOCK SW
LINCS POWER
COLOR
MEMO
T2
T1
VDD
M904
IRIS MOTOR
CN881 4P (WHT)
EE DRIVE +
EE DRIVE -
EE CONT +
EE CONT -
RED
BLK
ORG
YEL
CN881 5P (WHT)
VC-51
IA-1 (HIC)
JB
FP-80
BLK Y BLK
WHT Y MIX
YEL CAM 5V
BRN B-Y IN
RED R-Y IN
BLU CAM GND
ORG A/D Y
5V
8.5V
12V
20V
SYNC
BF
BLK
WEIGHT
AGC CONT
AGC DET
IRIS DET
CLP 3
YL-YH
YH
LALT
VC-50
MX-2 (HIC)
R CONT
B CONT
ID
XDL 1
XDL 2
SH 2
SH 1
CLP 2
G1
RB1
W782 4P
B.L
CLP 2
B-Y IN
R-Y IN
VC-49
DT-61 (HIC)
SH-2 (HIC)
CN701 10P (WHT)
12V
20V
H2
H1
PG
GND
V1
V2
V3
V4
W702 2P
CCD OUT
CN702 3P (WHT)
VD
HD
VN-1
VC-24
VC-21
VC-23
(BLK)
VIDEO OUT
RFU DC OUT
AUDIO OUT
W101 7P
Y BLK
Y MIX
CAM 5V
B-YOUT
R-YOUT
CAM GND
A/D Y
W701 10P
W702 2P
W103 3P
CN104 4P (RED)
W004 15P
A/D Y
Y BLK
TY
GND
C BLK
TR
TG
TB
HD
VD
BACK LIGHT
CAM STB
CN101 11P
VC-48
W102 7P
UNREG GND
UNREG
SS C 5V
AF CONT
SS GND
T SW
W SW
FP-135
AF MTR
GND
NC
UNREG
CN105 2P (WHT)
ZOOM ⊕
ZOOM ⊖
CN201 2P (WHT)
AUTO
WID
M906
ZOOM MOTOR
CN005 7P (WHT)
WIDE
TELE
SS GND
AF CONT
SS C 5V
AF UNREG
UNREG GND
VS-83
CN002 8P (WHT)
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
GND
DD-11
DC-DC CONVERTER
W001 5P
20V
12V
GND
8.5V
5V
VD-11
CN001 2P (RED)
UNREG
UNREG GND
CN2 (BLK)
AF MTR
GND
NC
NC
UNREG IN
ZOOM POTENTION UNIT
100k
CN4 (BRN)
Z.POT
CN3 (BRN)
F MOTOR
M905
FOCUS MOTOR
AF-32
CN1
GND
AGC/V
V OUT
VDD
OT
DS
OR
O3
O2
O1

FRAME FRAME


FV-1
FD-6
VC-51
IA-1 (HIC)
M904 IRIS MOTOR
CN881 4P (WHT)
CN881 5P (WHT)
FP-80
VC-50
MX-2 (HIC)
VC-49
DT-61 (HIC)
SH-2 (HIC)
JB
FC-18
LCD
FP-123
CN192
CN160 (BLK)
CN150 (BLK)
CN191 2P (WHT)
W190-2
W190-3
24
CN701 10P (WHT)
W702 2P
CN702 3P (WHT)
W782 4P
W781 4P
CN781 4P (WHT)
VN-1
VC-24
VC-21
VC-23
VC-22
VF-13
W101 7P
W701 10P
W103 3P
CN104 4P (RED)
CN200 4P (WHT)
CN101 11P
VC-48
W102 7P
FP-135
CN105 2P (WHT)
CN201 2P (WHT)
M906 ZOOM MOTOR
DD-11
DC-DC CONVERTER
CN002 8P (WHT)
CN001 2P (RED)
W001 5P
AF-32
CN2 (BLK)
CN4 (BRN)
CN3 (BRN)
CN1 (BLK)
ZOOM POTENTION UNIT
100k
M905 FOCUS MOTOR
CCD FOCUS SENSOR
A/D Y
Y BLK
TY
GND
C BLK
TR
TG
TB
HD
VD
BACK LIGHT
AF MTR
NC
UNREG IN
Z.POT
F MOTOR
AGC/V REF
V OUT
VDD
OT
DS
OR
O3
O2
O1
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
UNREG
UNREG GND
20V
12V
8.5V
5V
17
18
19
20
21
22
23
24
25
26
27
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O

FRAME FRAME

FRAME

4-2. VC-48 (CCD IMAGER), VC-49 (TIMING/SYNC GENERATOR), VC-50 (CAMERA MATRIX), VC-51 (CAMERA ENCODER) PRINTED WIRING BOARDS

– Ref. No. VC-48, VC-49, VC-50, VC-51 BOARDS: 1,000 series –

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

When indicating parts by reference number, please include the board name.

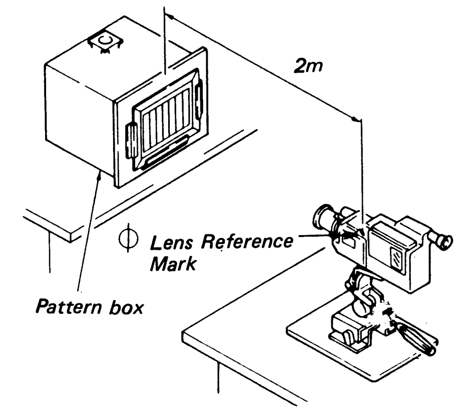
For schematic diagram:

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- △ : internal component.
- ☐ : adjustment for repair.
- ▬ : B+ Line

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- Voltage and waveform measuring conditions:
  (1) Sample object: Pattern box color bars.
  (2) Voltage values: Relative to gound. [illegible]d with a DC digital multim[illegible] impedance 10M-ohm or more).

1. Connection



2m
Lens Reference Mark
Pattern box

2. Adjust the zooming the output waveform can be obtain.

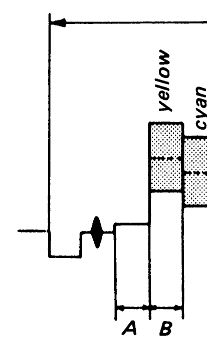
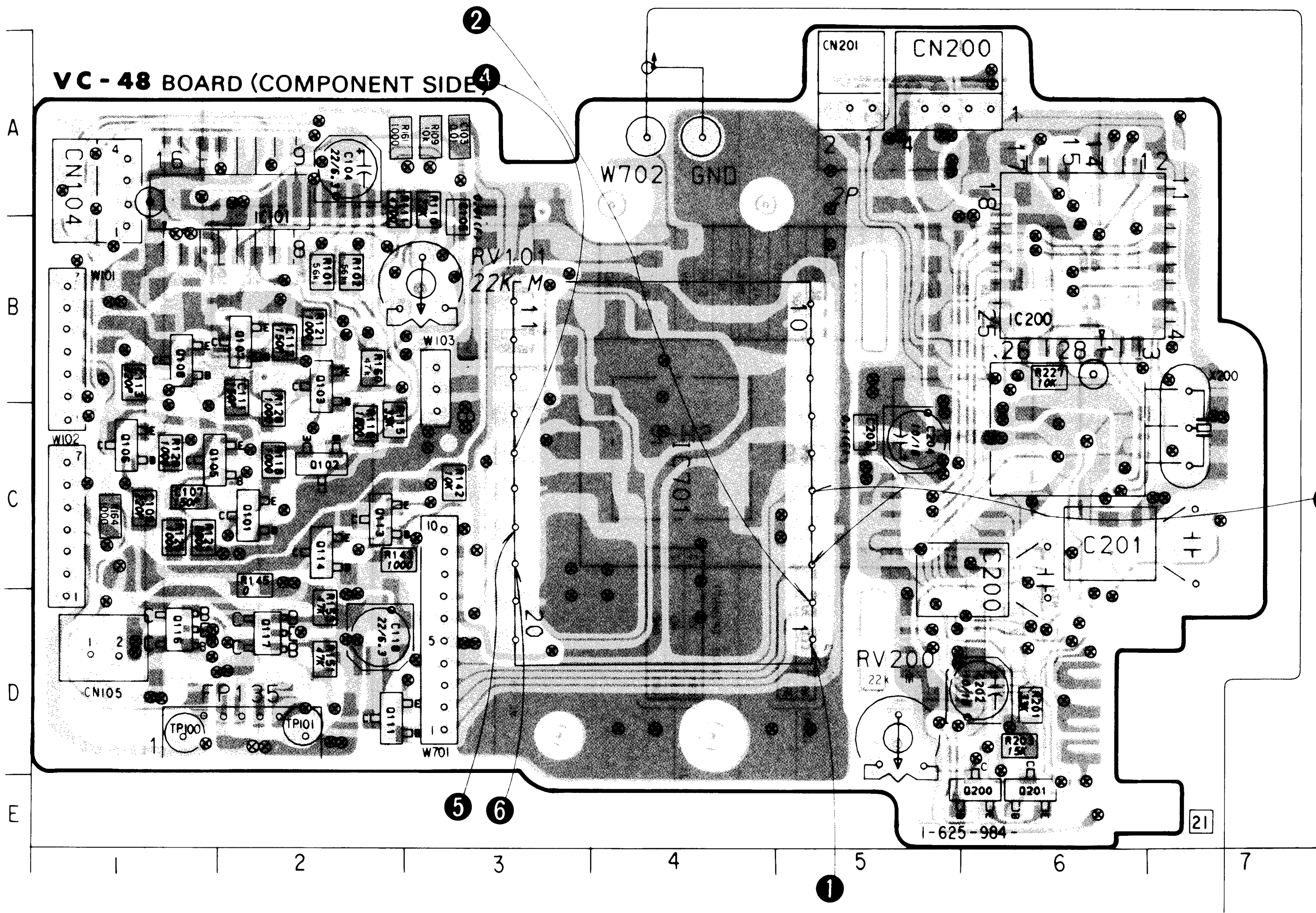
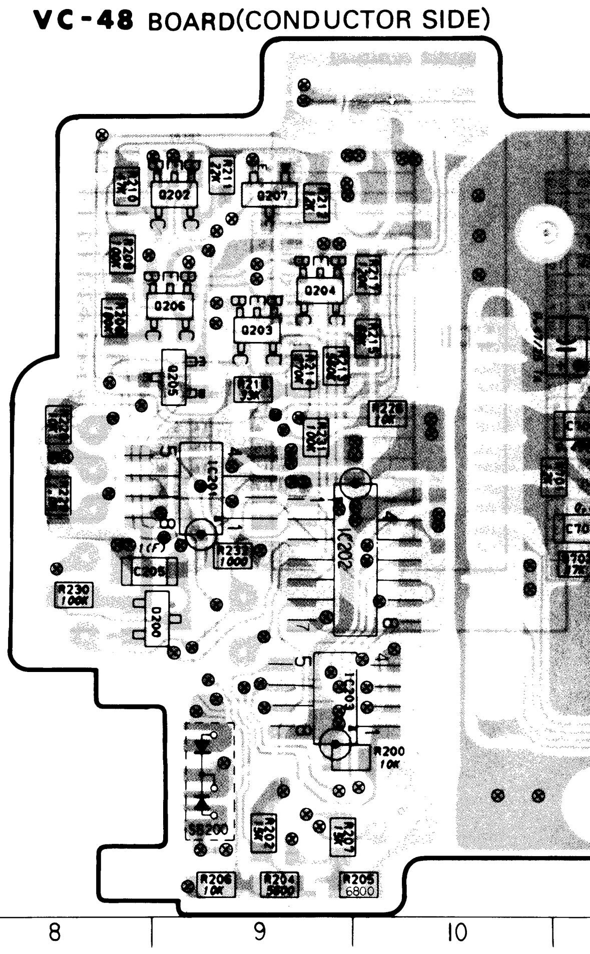


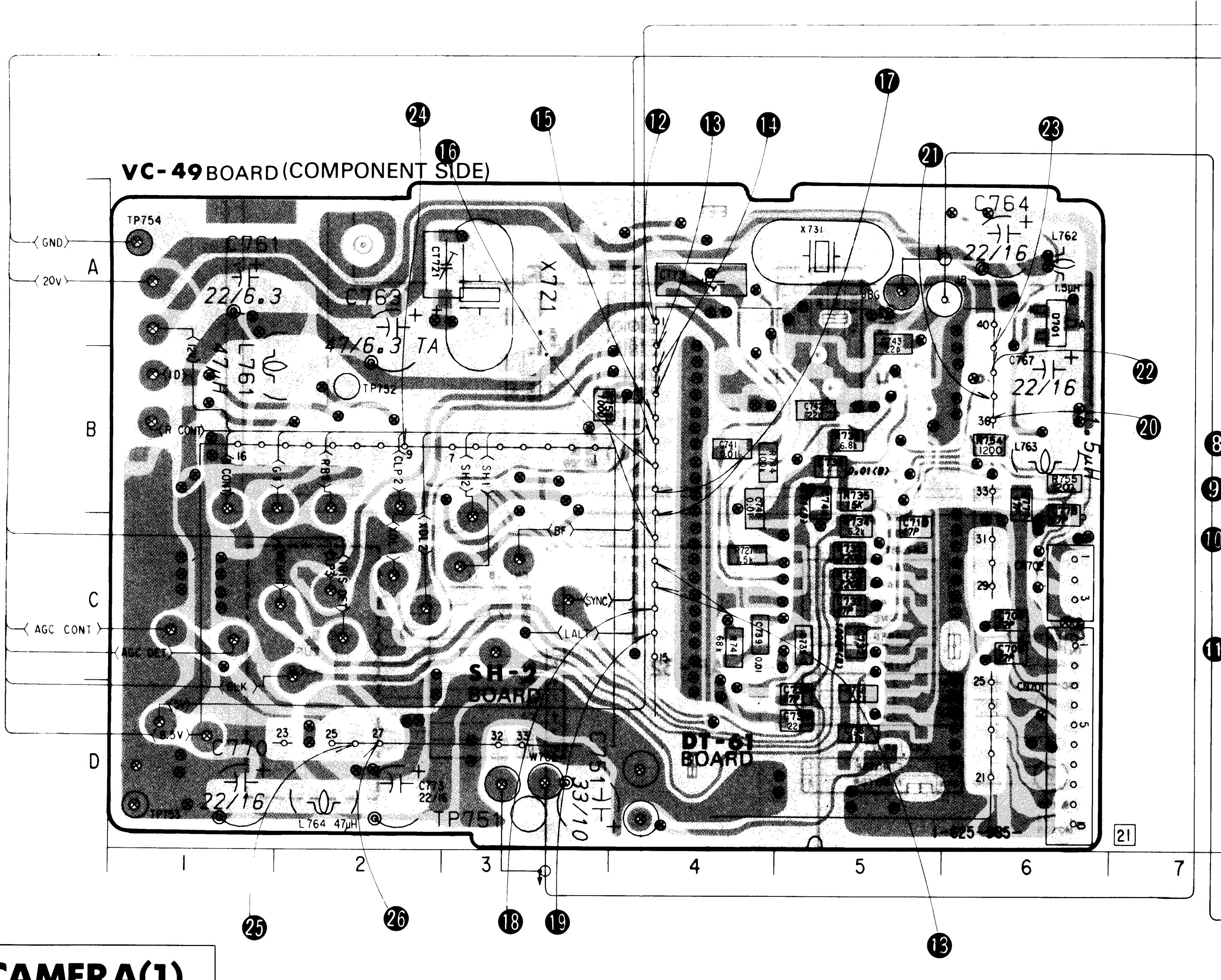
Fig. a Video output



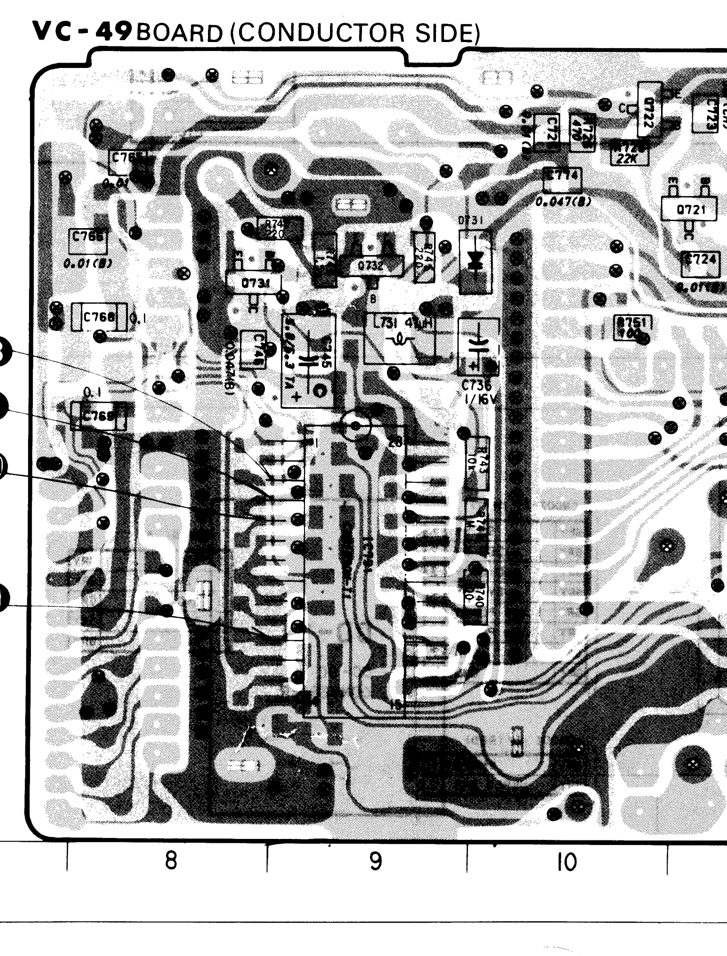
VC-48 BOARD (COMPONENT SIDE)
CN104
CN105
CN200
CN201
W702
GND
RV101 22K M
RV200 22K
IC200
IC201
X200
TP101
TP135
W701
1-625-984-
21
A
B
C
D
E
1
2
3
4
5
6
7



VC-48 BOARD(CONDUCTOR SIDE)
8
9
10



VC-49 BOARD (COMPONENT SIDE)
GND
20V
AGC CONT
TP754
C761 22/6.3
C763 47/6.3 TA
X721
X731
C764 22/16
C767 22/16
L761
L762
L764 47μH
C770 22/16
C751 33/10
TP751
SH-2 BOARD
DT-61 BOARD
1-625-985-
21
A
B
C
D
1
2
3
4
5
6
7



VC-49 BOARD (CONDUCTOR SIDE)
IC731
C731 1/16V
L731
8
9
10

with
dance

2. **Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.**

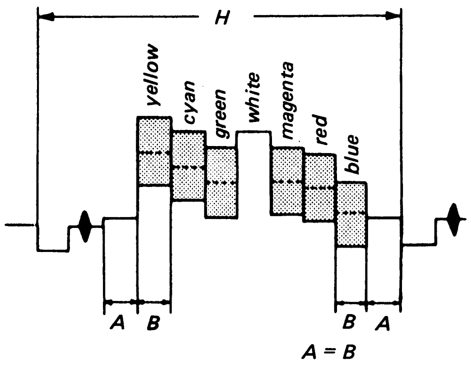

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A = B

Fig. a Video output waveform J361 on VA-41 board

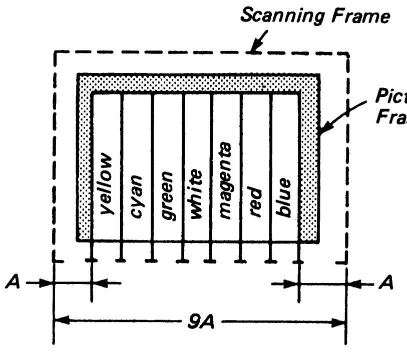
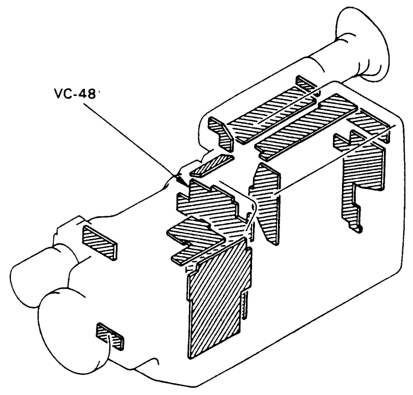
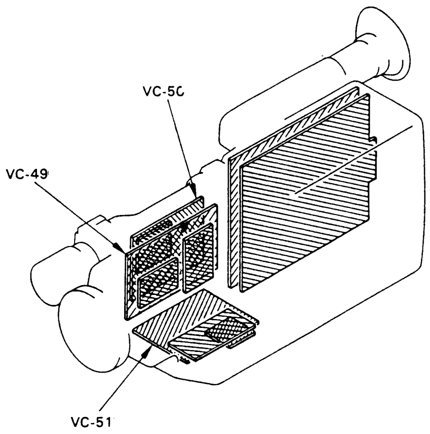

Scanning Frame
Picture Tube Frame
yellow
cyan
green
white
magenta
red
blue
A
A
9A

Fig. b Picture of TV monitor screen

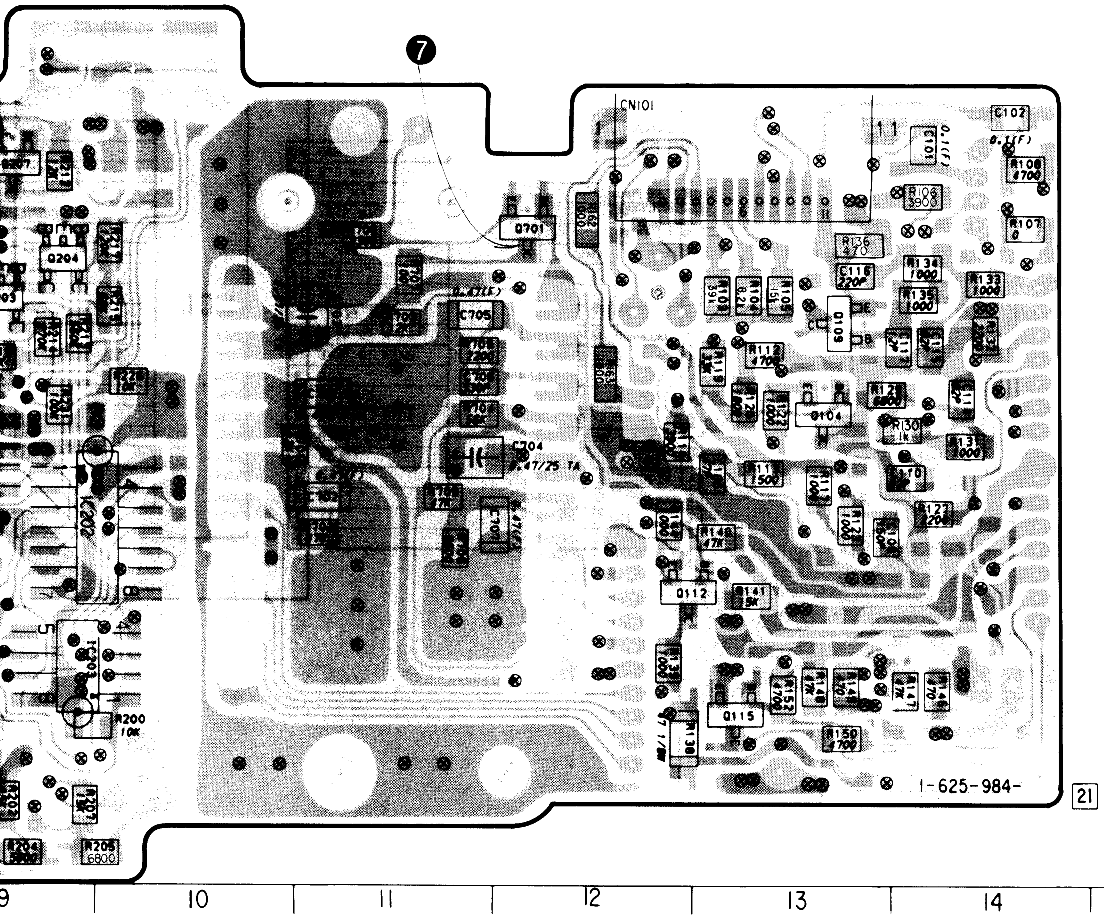
- Digital transistor (VC-51: Q861) is transistor with resistor. Refer to the VC-51 board schematic diagram for digital transistor.

Be sure to always read "Note on replacing the CCD imager block" in page 60 wh replacing the VC-48 complete board, DT-61 complete board, and CCD imager blo (IC701 on the VC-48 board and IC002 on the DT-61 board).




VC-5C
VC-49
VC-51

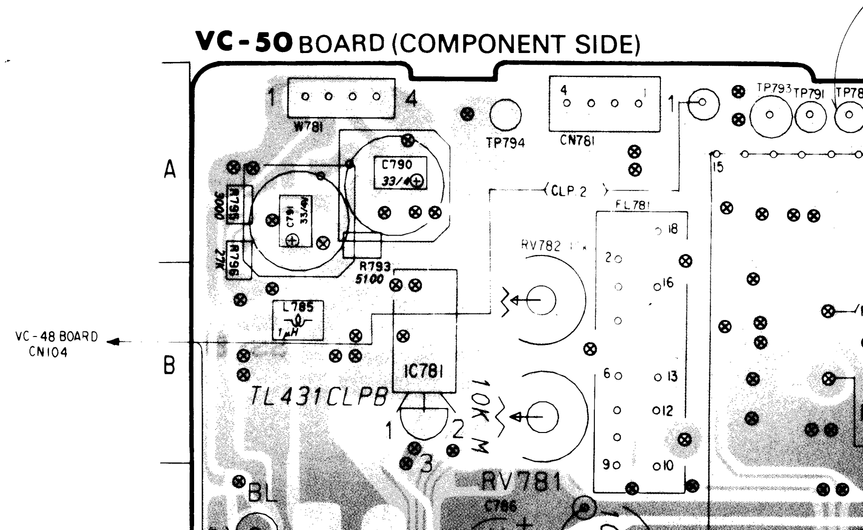
CONDUCTOR SIDE)

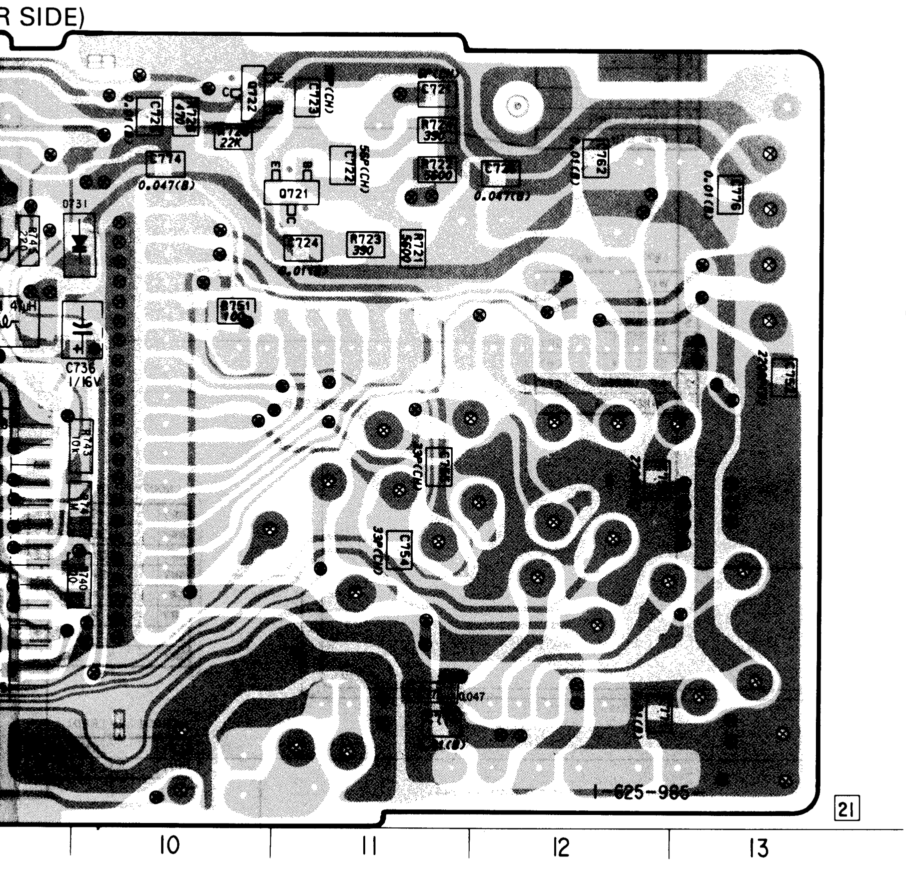

7
CN101
Q701
Q204
C705
C704
Q112
Q115
Q104
Q110
R200
10K
1-625-984-
21
9
10
11
12
13
14

- **VC-48 BOARD**

CN101	A-12
CN104	A · 1
CN105	D · 1
CN200	A · 5
CN201	A · 5
D200	C-9
IC101	B-2
IC200	B · 6
IC201	C · 9
IC202	C · 9
IC203	D · 9
IC701	C · 4
Q101	C · 2
Q102	C · 2
Q103	B · 2
Q104	C · 13
Q105	C · 1
Q106	C · 1
Q107	B-2
Q108	B · 1
Q109	B · 13
Q111	D · 2
Q112	C-12
Q113	C · 2
Q114	C · 2
Q115	D · 13
Q116	D · 1
Q117	D · 2
Q200	E-6
Q201	E · 6
Q202	A-9
Q203	B · 9
Q204	B · 9
Q205	B-9
Q206	B · 9
Q207	A · 9
Q701	B · 12
RV101	B · 3
RV200	D · 5
TP100	D · 1
TP101	D · 2

VC-50 BOARD (COMPONENT SIDE)

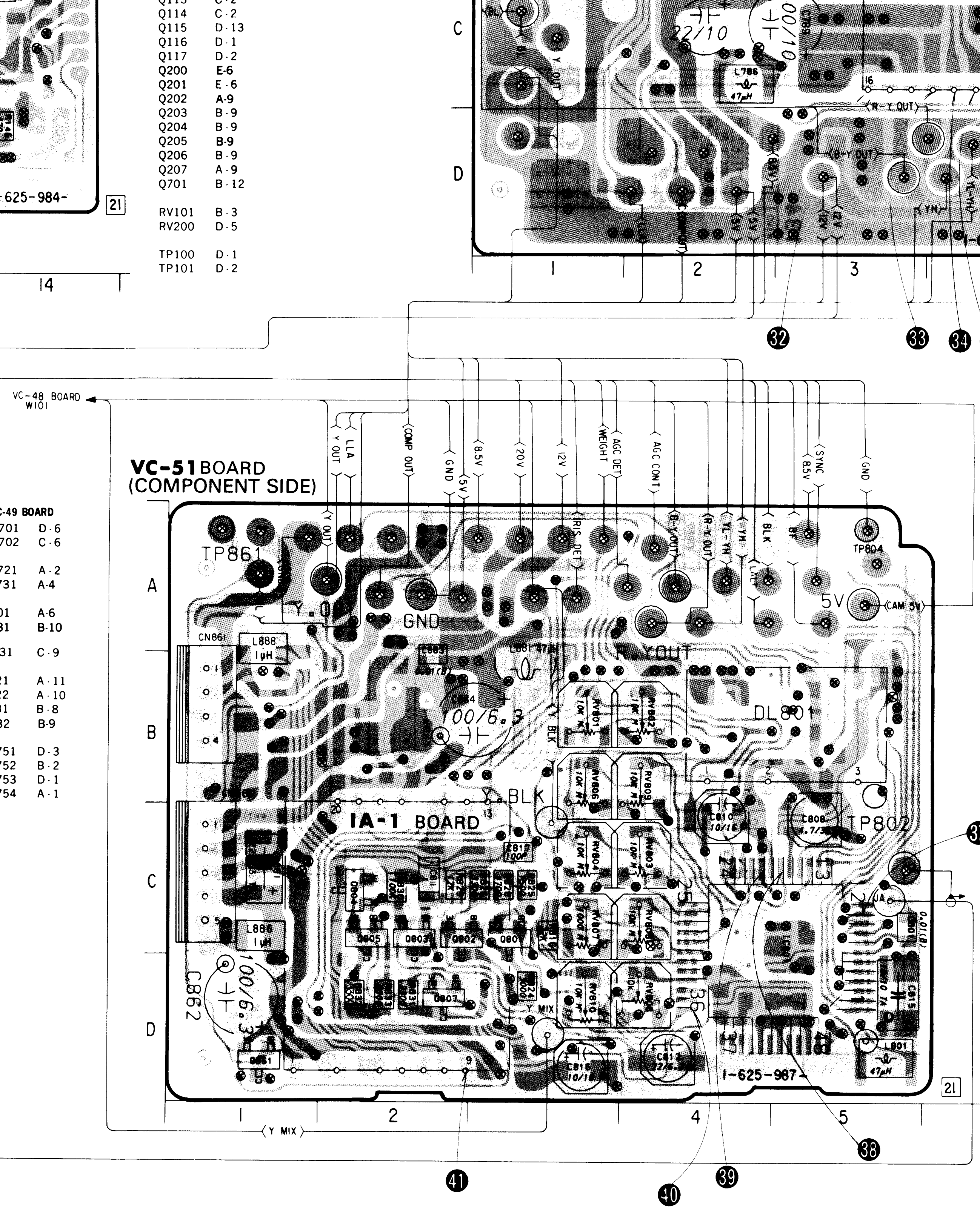

VC-48 BOARD CN104
W781
TP794
CN761
TP793
TP791
C790
33/4
CLP 2
FL781
RV782
R793
5100
L785
IC781
TL431CLPB
10K M
RV781
BL
C786
22/10
100/10
L786
47μH
R-Y OUT
B-Y OUT
YH
A
B
C
D
1
2
3
32
33
34


R SIDE)
Q721
C714
R723
390
R724
C736
1/16V
1-625-985
21
10
11
12
13

- **VC-49 BOARD**

CN701	D · 6
CN702	C · 6
CT721	A · 2
CT731	A-4
D701	A-6
D731	B-10
IC731	C · 9
Q721	A · 11
Q722	A · 10
Q731	B · 8
Q732	B-9
TP751	D · 3
TP752	B · 2
TP753	D · 1
TP754	A · 1

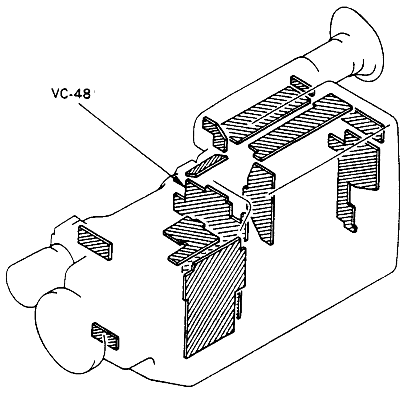
VC-51 BOARD (COMPONENT SIDE)

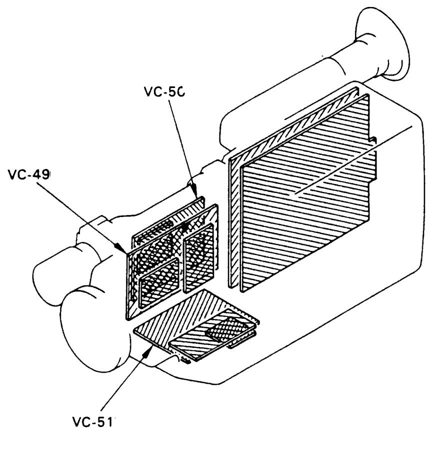

VC-48 BOARD W101
Y OUT
LLA
COMP OUT
GND
5V
8.5V
20V
12V
WEIGHT
AGC DET
AGC CONT
GND
SYNC
8.5V
TP861
TP804
GND
5V
CAM 5V
CN861
L888
1μH
Y OUT
DL801
100/6.3
BLK
IA-1 BOARD
TP802
C808
L886
1μH
C862
100/6.3
Y MIX
1-625-987
21
L801
47μH
A
B
C
D
1
2
4
5
38
39
40
41

- Digital transistor (VC-51: Q861) is transistor with resistor. Refer to the VC-51 board schematic diagram for digital transistor.

Tube

Be sure to always read "Note on replacing the CCD imager block" in page 60 when replacing the VC-48 complete board, DT-61 complete board, and CCD imager block (IC701 on the VC-48 board and IC002 on the DT-61 board).




VC-50
VC-49
VC-51

ARD
A-12
A-1
D-1
A-5
A-5

C-9

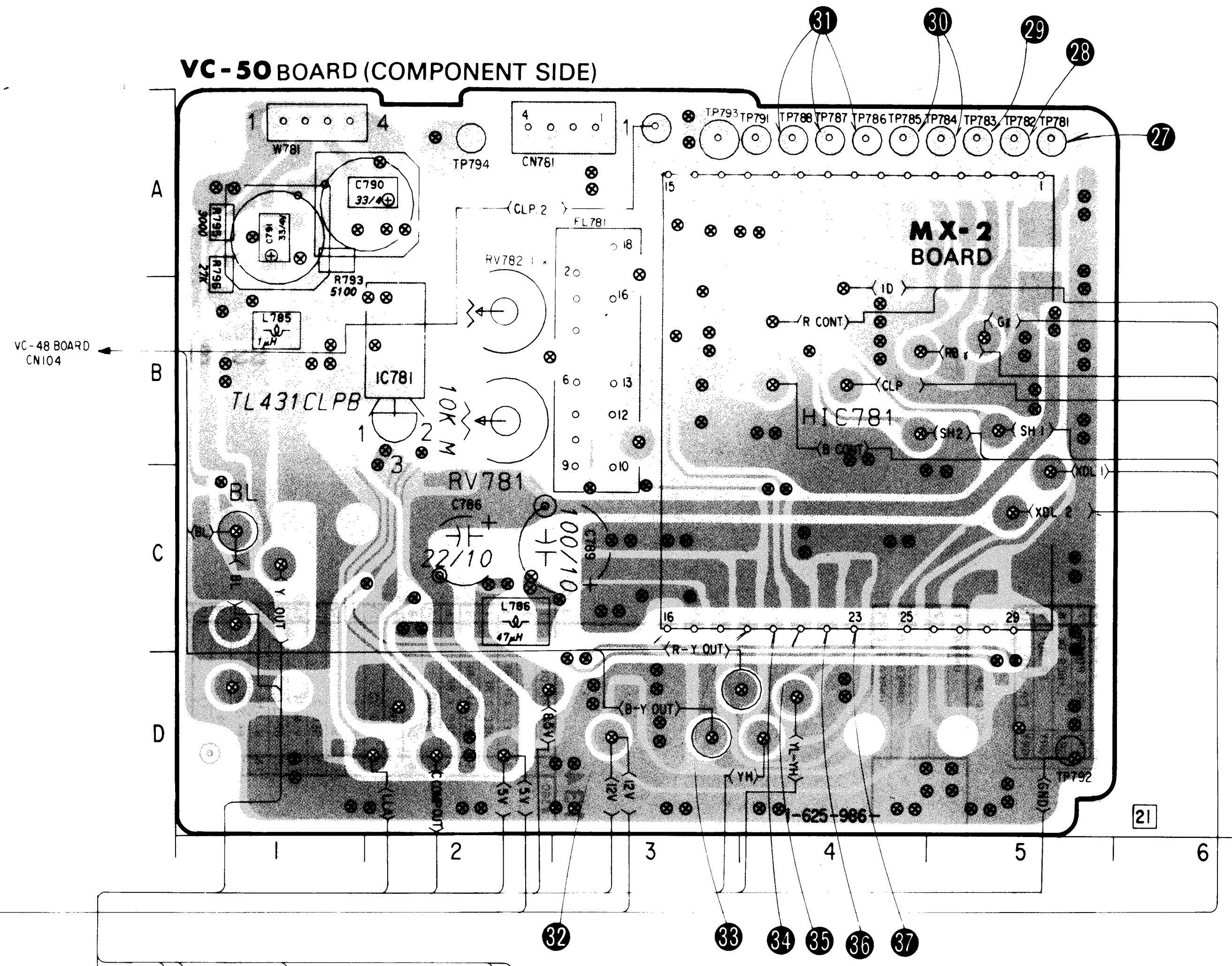
B-2
B-6
C-9
C-9
D-9
C-4

C-2
C-2
B-2
C-13
C-1
C-1
B-2
B-1
B-13
D-2
C-12
C-2
C-2
D-13
D-1
D-2
E-6
E-6
A-9
B-9
B-9
B-9
B-9
A-9
B-12

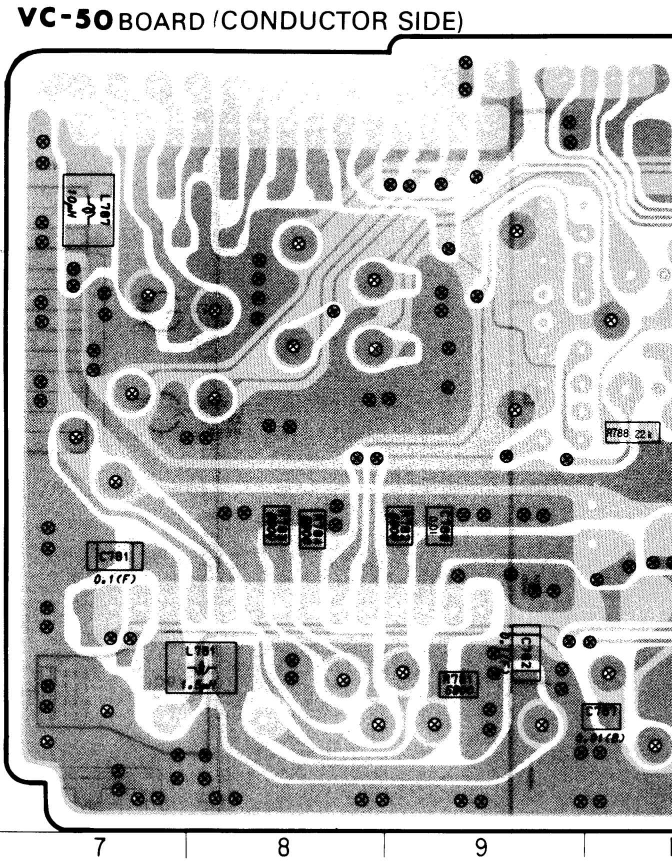
B-3
D-5

D-1
D-2

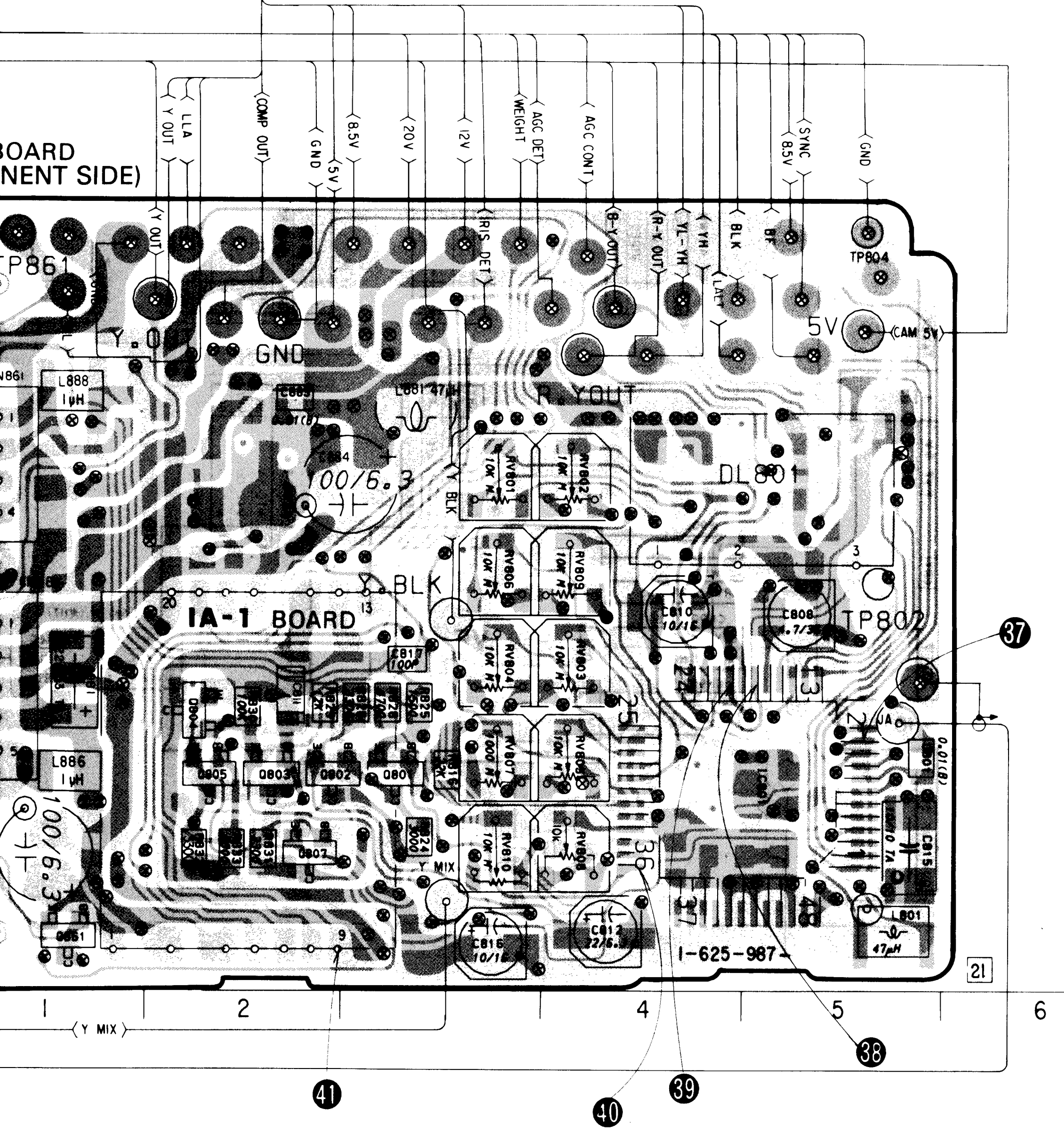
VC-50 BOARD (COMPONENT SIDE)


VC-48 BOARD CN104
W781
TP794
CN761
TP793 TP791 TP788 TP787 TP786 TP785 TP784 TP783 TP782 TP781
C790 33/4
R793 5100
L785 1μH
IC781
TL431CLPB
10K M
RV782
RV781
FL781
MX-2 BOARD
HIC781
ID
R CONT
CLP
SH2
SH1
B CONT
XDL 1
XDL 2
C786 22/10
C789 100/10
L786 47μH
BL
Y OUT
R-Y OUT
B-Y OUT
YL-YH
YH
COMP OUT
5V
8.5V
12V
GND
TP792
1-625-986-
A
B
C
D
1
2
3
4
5
6
⑦27
⑦28
⑦29
⑦30
⑦31
⑦32
⑦33
⑦34
⑦35
⑦36
⑦37

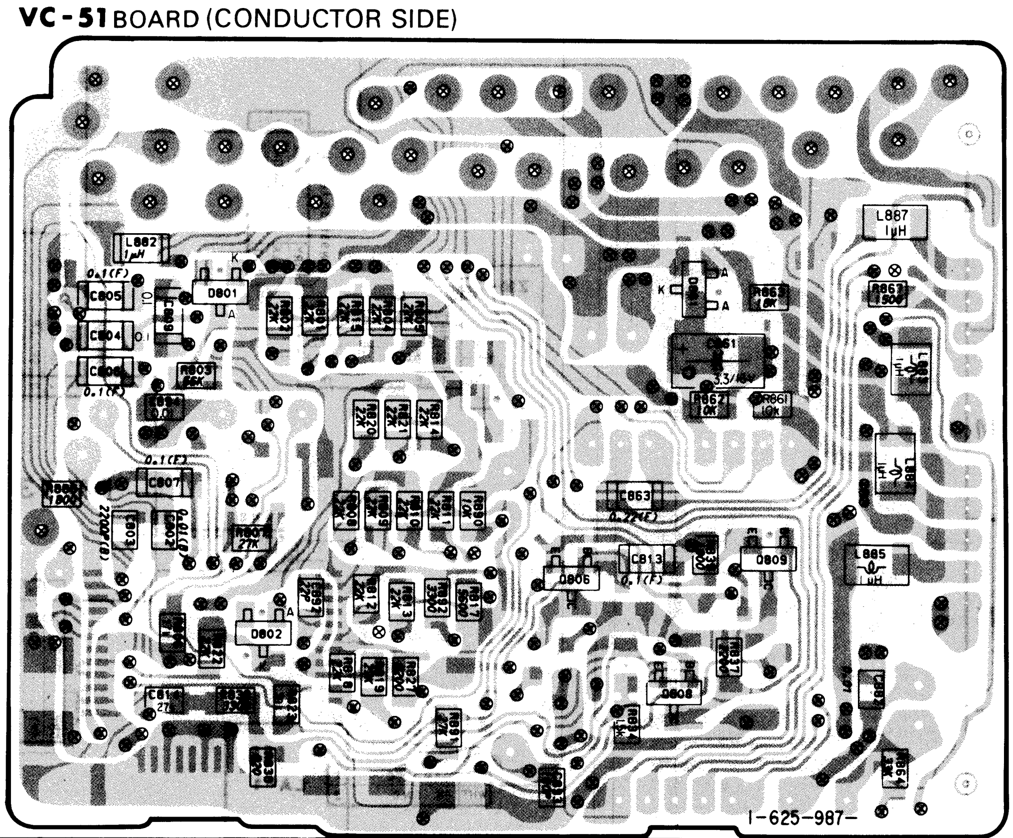
VC-50 BOARD (CONDUCTOR SIDE)


L781 10μH
R788 22k
C781 0.1(F)
7
8
9

BOARD
NENT SIDE)


Y OUT
LLA
COMP OUT
GND
8.5V
20V
12V
AGC DET WEIGHT
AGC CONT
SYNC 8.5V
GND
Y OUT
5V
RIS DET
B-Y OUT
R-Y OUT
YL-YH
YH
BLK
BF
TP804
5V
CAM 5V
TP861
Y OUT
GND
L888 1μH
L881 47μH
R-YOUT
100/6.3
DL801
BLK
IA-1 BOARD
TP802
L886 1μH
MIX
C816 10/16
C812 22/6.3
L801 47μH
1-625-987-
Y MIX
1
2
4
5
6
36
⑦37
⑦38
⑦39
⑦40
⑦41

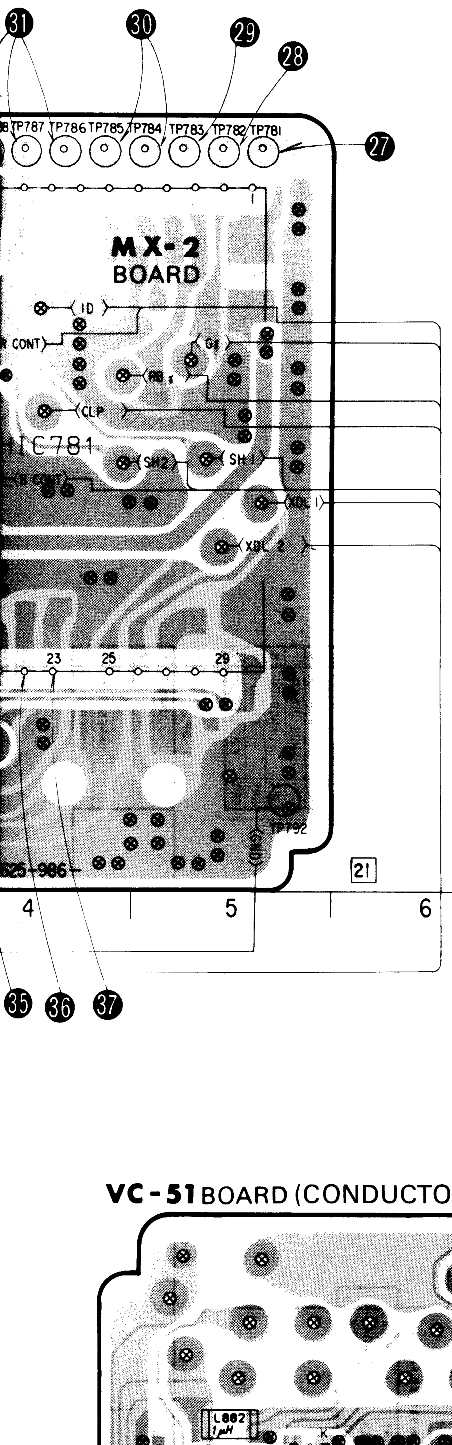
VC-51 BOARD (CONDUCTOR SIDE)


L882 1μH
D801
L887 1μH
D802
1-625-987-
7
8
9
10
11

• VC-51 BOARD

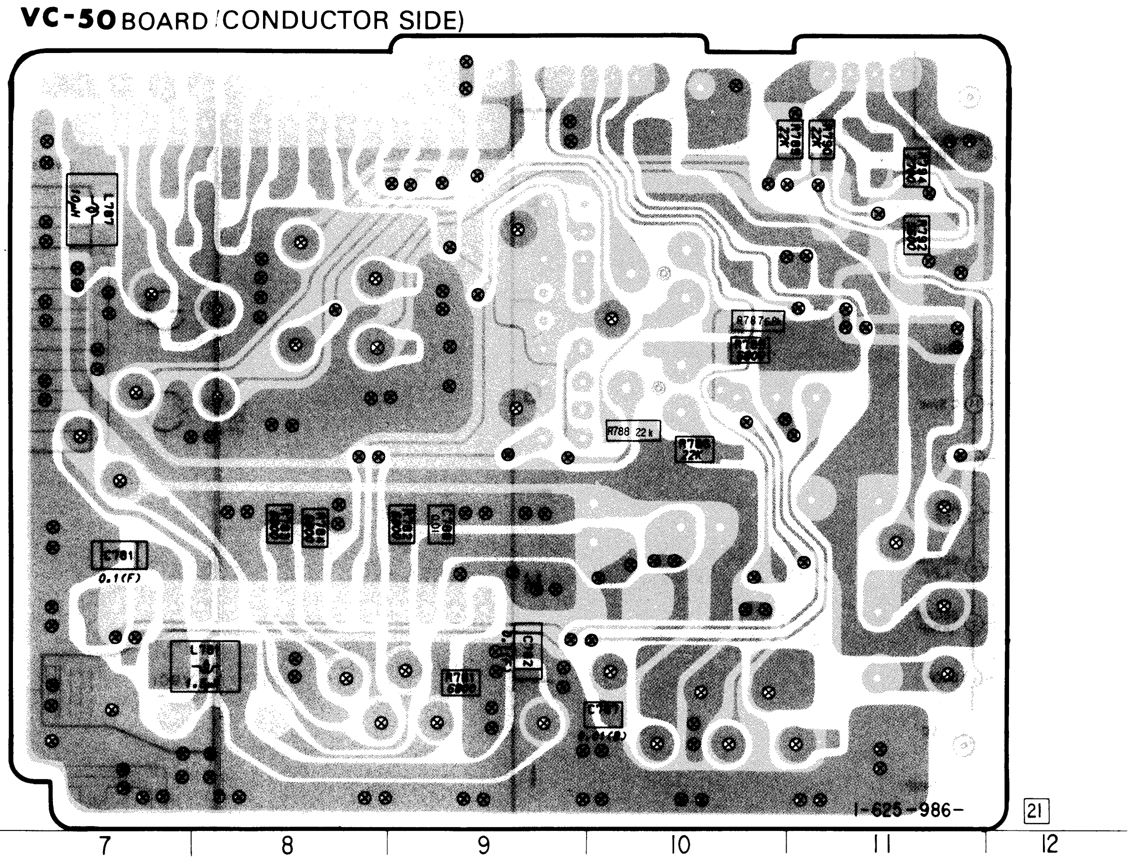
CN861	B-1
CN881	C-1
D801	B-7
D802	C-8
D861	B-1
IC801	C-5
Q801	C-3
Q802	C-2
Q803	C-2
Q804	C-2
Q805	C-2
Q806	C-9
Q807	D-2
Q808	D-1
Q809	C-1
Q861	D-1

hen
ock



31
30
29
28
27
TP787 TP786 TP785 TP784 TP783 TP782 TP781
MX-2 BOARD
ID
R CONT
GR
RB
CLP
IC781
SH2
SH1
XDL 1
XDL 2
23
25
29
TP792
625-986-
21
4
5
6
35
36
37

VC-50 BOARD (CONDUCTOR SIDE)

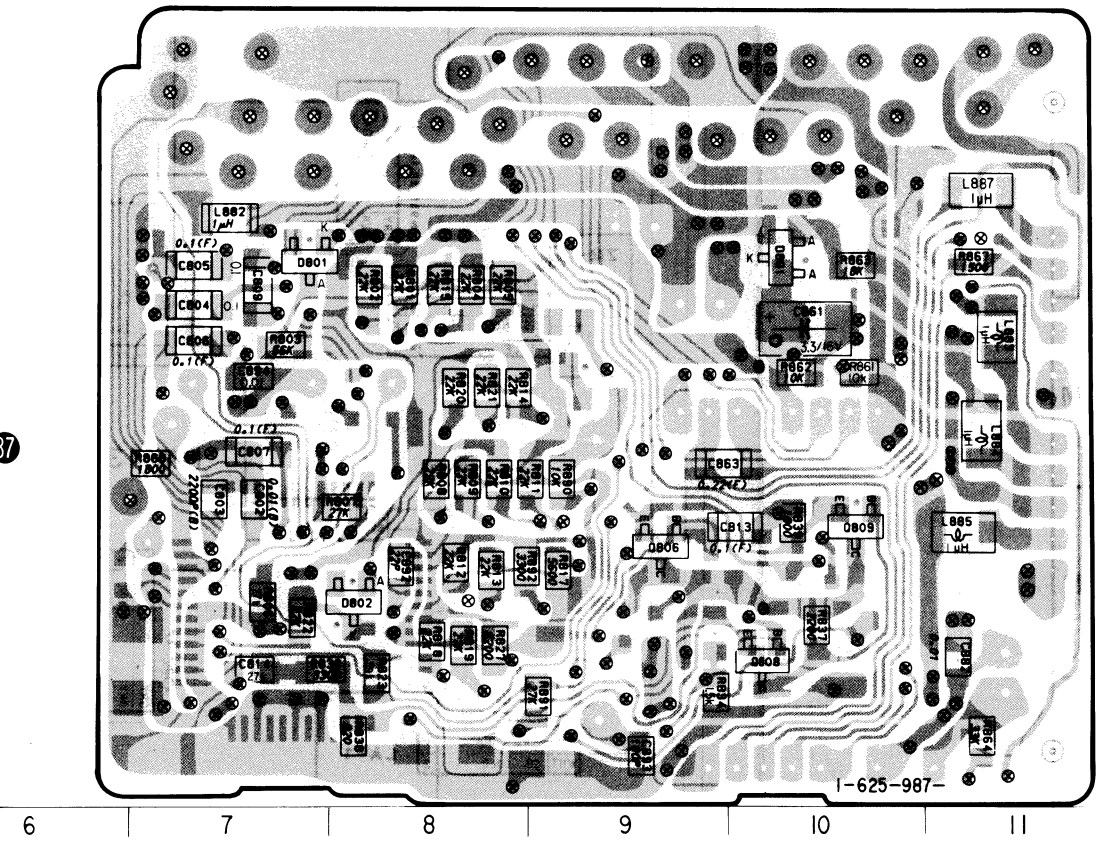


R788 22k
C781 0.1(F)
1-625-986-
21
7
8
9
10
11
12

• VC-50 BOARD

CN781	A-3
IC781	B-2
RV781	B-2
RV782	B-2
TP781	A-5
TP782	A-5
TP783	A-5
TP784	A-5
TP785	A-4
TP786	A-4
TP787	A-4
TP788	A-4
TP791	A-4
TP792	D-5
TP793	A-3
TP794	A-2

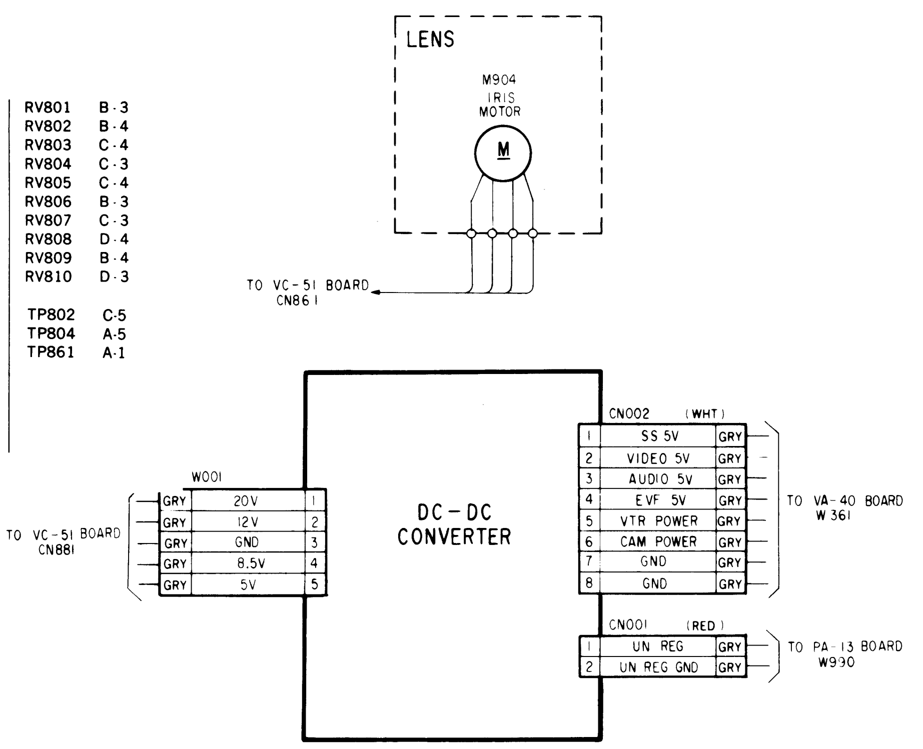
VC-51 BOARD (CONDUCTOR SIDE)



L887 1μH
L882 1μH
D801
D802
Q806
Q808
Q809
C813 0.1(F)
L885 1μH
1-625-987-
21
6
7
8
9
10
11

• VC-51 BOARD

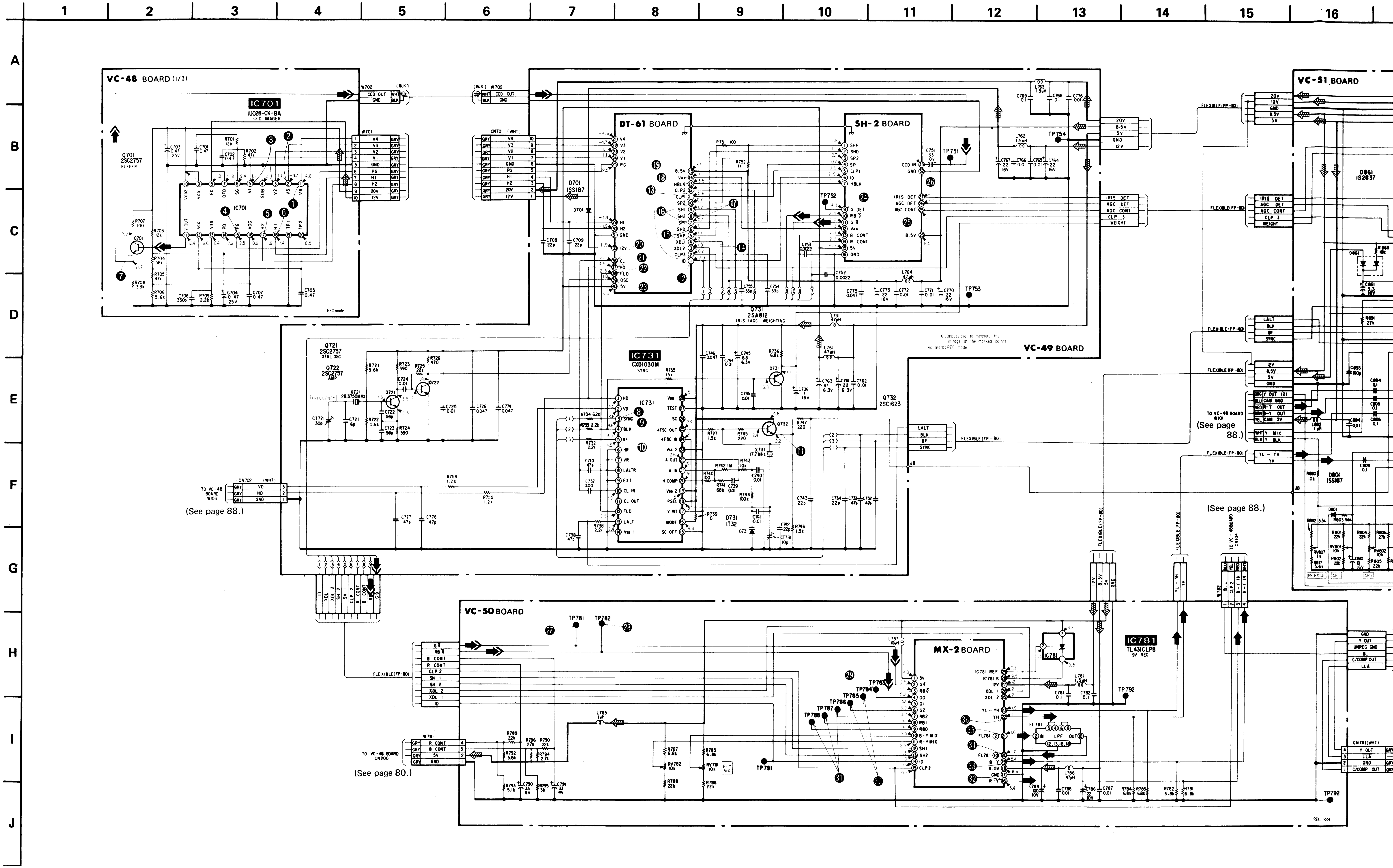
CN861	B-1	RV801	B-3
CN881	C-1	RV802	B-4
		RV803	C-4
D801	B-7	RV804	C-3
D802	C-8	RV805	C-4
D861	B-10	RV806	B-3
		RV807	C-3
IC801	C-5	RV808	D-4
		RV809	B-4
Q801	C-3	RV810	D-3
Q802	C-2		
Q803	C-2	TP802	C-5
Q804	C-2	TP804	A-5
Q805	C-2	TP861	A-1
Q806	C-9		
Q807	D-2		
Q808	D-10		
Q809	C-10		
Q861	D-1		

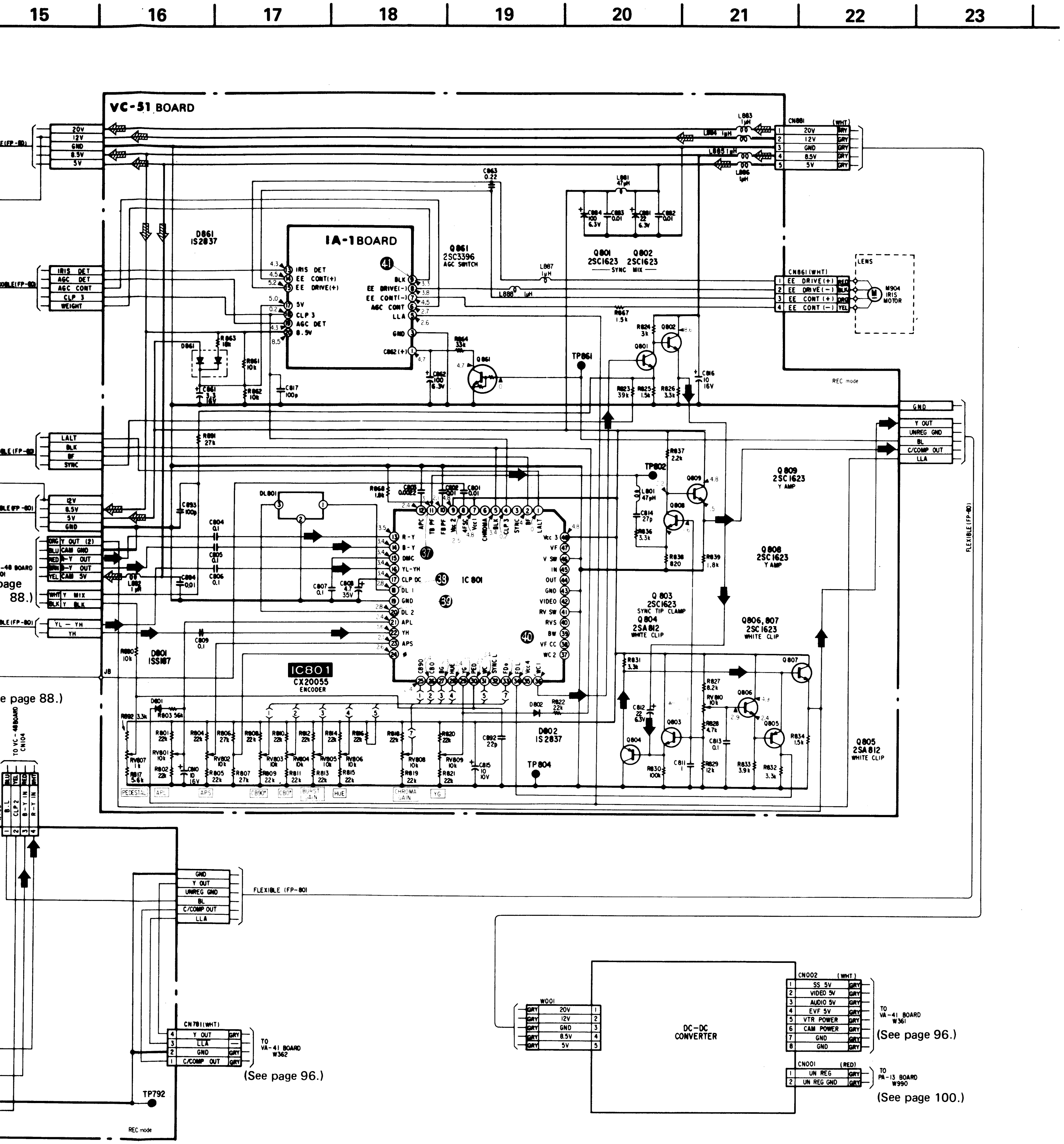


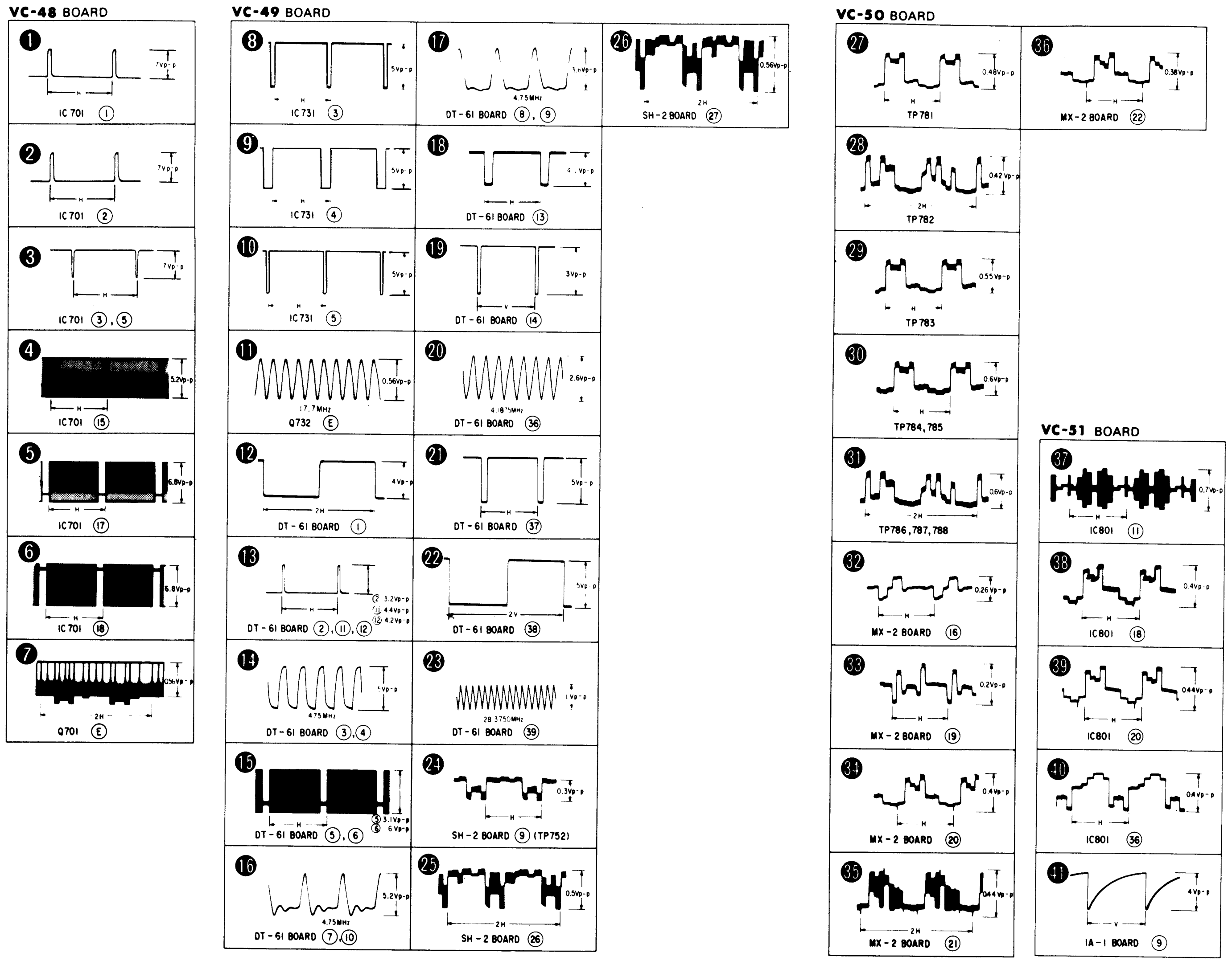
LENS
M904
IRIS
MOTOR
M
TO VC-51 BOARD
CN861
DC-DC
CONVERTER
W001
GRY 20V 1
GRY 12V 2
GRY GND 3
GRY 8.5V 4
GRY 5V 5
TO VC-51 BOARD
CN881
CN002 (WHT)
1 SS 5V GRY
2 VIDEO 5V GRY
3 AUDIO 5V GRY
4 EVF 5V GRY
5 VTR POWER GRY
6 CAM POWER GRY
7 GND GRY
8 GND GRY
TO VA-40 BOARD
W361
CN001 (RED)
1 UN REG GRY
2 UN REG GND GRY
TO PA-13 BOARD
W990

VC-48 (CCD IMAGER), VC-49 (TIMING/SYNC GENERATOR), VC-50 (CAMERA MATRIX), VC-51 (CAMERA ENCODER) SCHEMATIC DIAGRAM

– Ref. No. VC-48, VC-49, VC-50, VC-51 BOARDS: 1,000 series –


VC-48 BOARD (1/3)
IC701
IU028-CK-BA
CCD IMAGER
Q701
2SC2757
BUFFER
W702
CCD OUT
GND
W701
CN701 (WHT)
DT-61 BOARD
SH-2 BOARD
D701
1SS187
TP751
TP752
TP753
TP754
Q731
2SA812
IRIS (AGC) WEIGHTING
VC-49 BOARD
Q721
2SC2757
XTAL OSC
Q722
2SC2757
AMP
X721
28.3750MHz
IC731
CXD1030M
SYNC
Q732
2SC1623
X731
17.7MHz
D731
1T32
CN702 (WHT)
TO VC-48 BOARD W103
(See page 88.)
FLEXIBLE (FP-80)
LALT
BLK
BF
SYNC
VC-51 BOARD
D861
1S2837
D801
1SS187
TO VC-48 BOARD W101
(See page 88.)
TO VC-48 BOARD CN104
W782
VC-50 BOARD
TP781
TP782
TP783
TP784
TP785
TP786
TP787
TP788
TP791
TP792
MX-2 BOARD
IC781
TL431CLPB
9V REG
W781
TO VC-48 BOARD CN200
(See page 80.)
CN781 (WHT)
REC mode
PEDESTAL
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J


15
16
17
18
19
20
21
22
23
VC-51 BOARD
IA-1BOARD
IC801
CX20055
ENCODER
D861
1S2837
Q861
2SC3396
AGC SWITCH
Q801 Q802
2SC1623 2SC1623
SYNC MIX
Q809
2SC1623
Y AMP
Q808
2SC1623
Y AMP
Q803
2SC1623
SYNC TIP CLAMP
Q804
2SA812
WHITE CLIP
Q806, 807
2SC1623
WHITE CLIP
Q805
2SA812
WHITE CLIP
D801
1SS187
D802
1S2837
TP861
TP802
TP804
TP792
CN861 (WHT)
CN881
LENS
M904
IRIS MOTOR
20V
12V
GND
8.5V
5V
IRIS DET
AGC DET
AGC CONT
CLP 3
WEIGHT
LALT
BLK
BF
SYNC
GND
Y OUT
UNREG GND
BL
C/COMP OUT
LLA
FLEXIBLE (FP-80)
REC mode
(See page 88.)
TO VC-48 BOARD CN104
CN781 (WHT)
TO VA-41 BOARD W362
(See page 96.)
W001
DC-DC CONVERTER
CN002 (WHT)
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
GND
TO VA-41 BOARD W361
(See page 96.)
CN001 (RED)
UN REG
UN REG GND
TO PA-13 BOARD W990
(See page 100.)
PEDESTAL
APL
APS
BURST GAIN
HUE
CHROMA GAIN
YG



- **Signal path**

➡ : REC Y Signal

➡ : REC CHROMA Signal

⇛ : REC Y/CHROMA Signal

▨ : Flowing direction of B line.

Be sure to always read "Note on replacing the CCD imager block" in page 60 when replacing the VC-48 complete board, DT-61 complete board, and CCD imager block (IC701 on the VC-48 board and IC002 on the DT-61 board).

4-3. AF-32 (AUTO FOCUS CONTROL), VC-48 (ZOOM MOTOR CONTROL, AUTO WHITE BALANCE) PRINTED WIRING BOARDS

– Ref. No. AF-32, VC-48 BOARDS: 2,000 series –

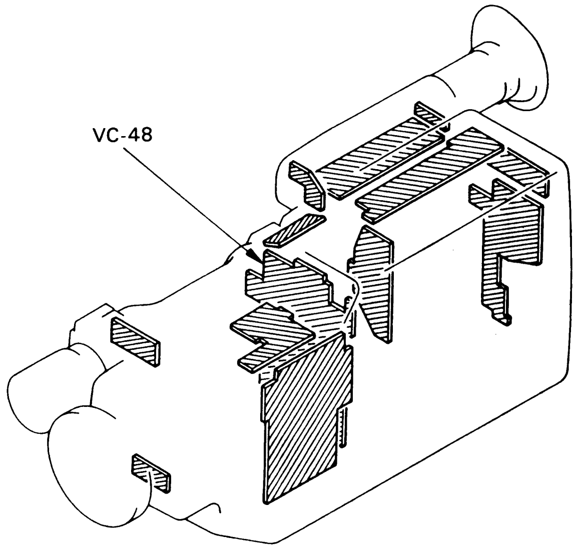
Note:

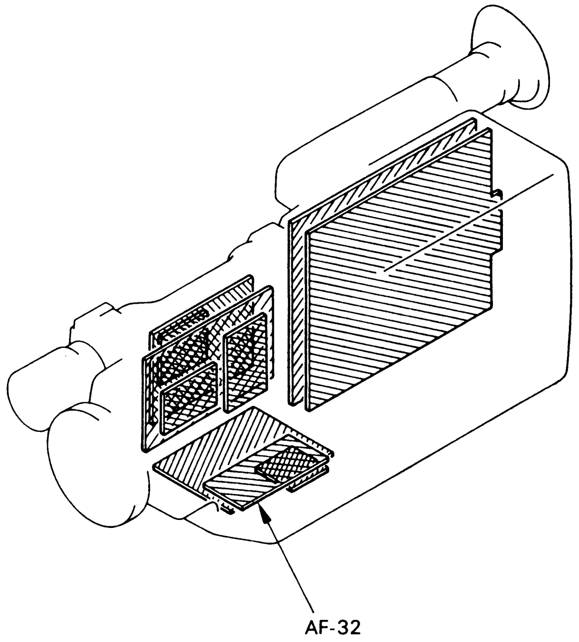
- ⊗ : Through hole.
- Pattern of the rear side.

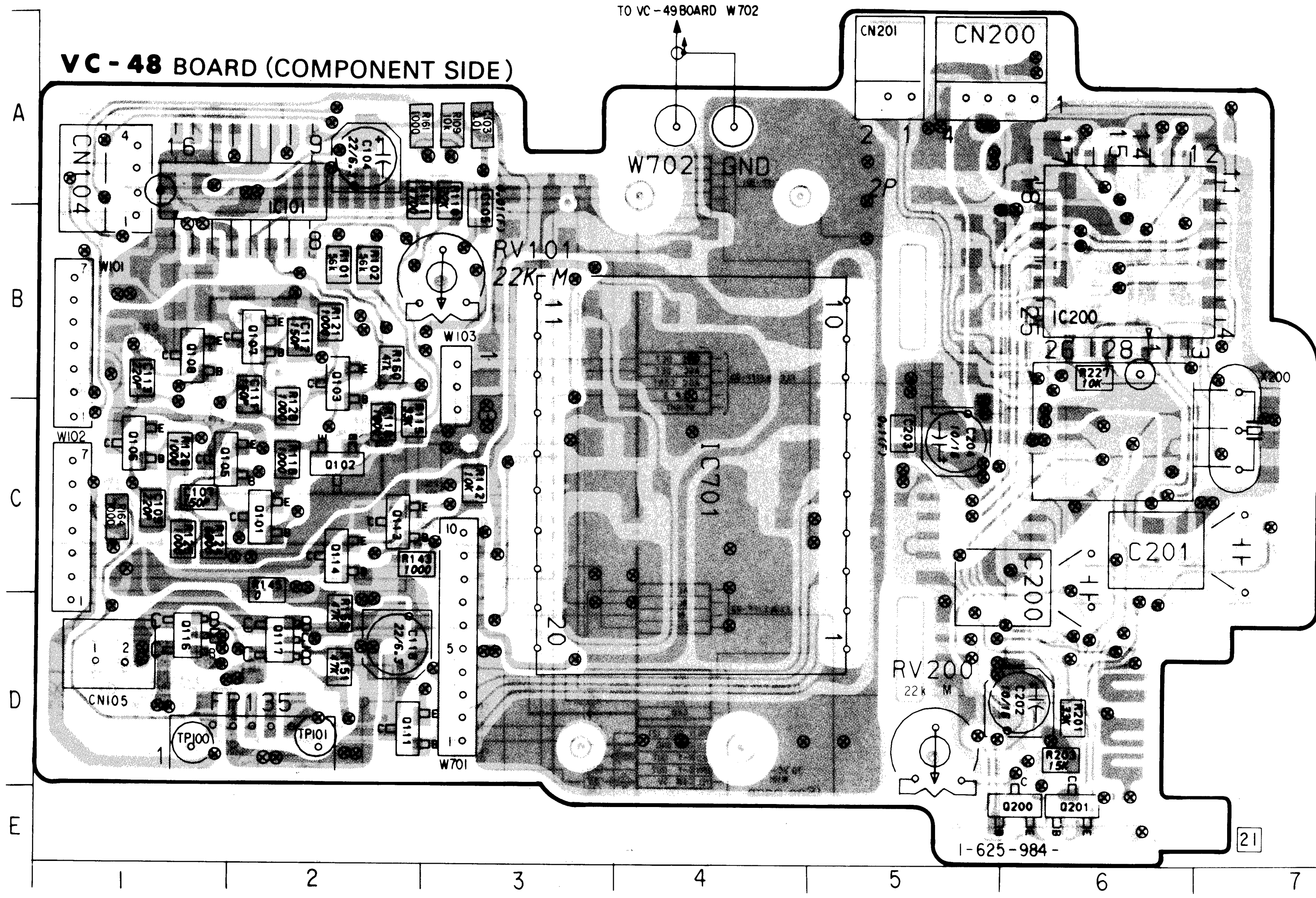
Caution:

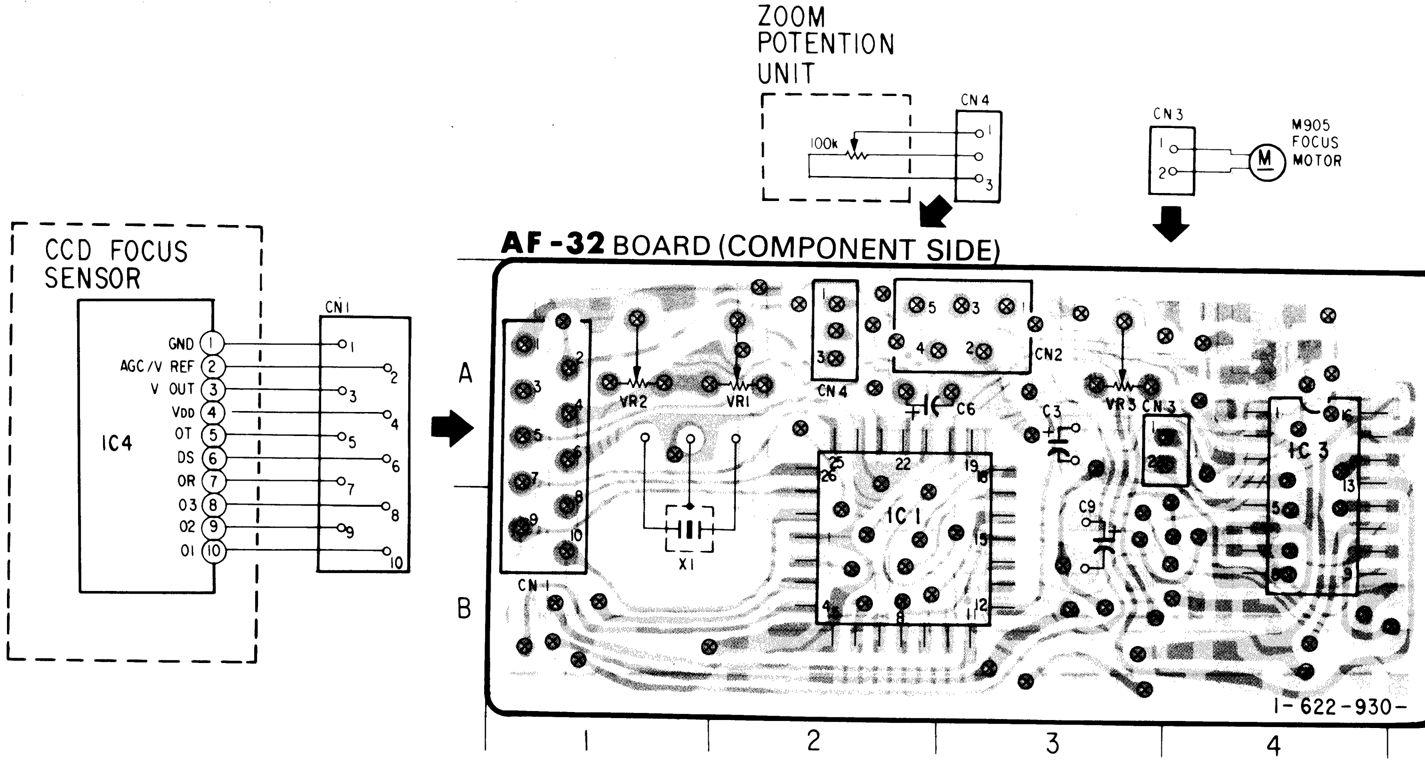
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (VC-48: Q115, Q200, Q201, Q202, Q203, Q204, Q205, Q206, Q207) is transistor with resistor.
  Refer to the VC-48 board schematic diagram for digital transistor.

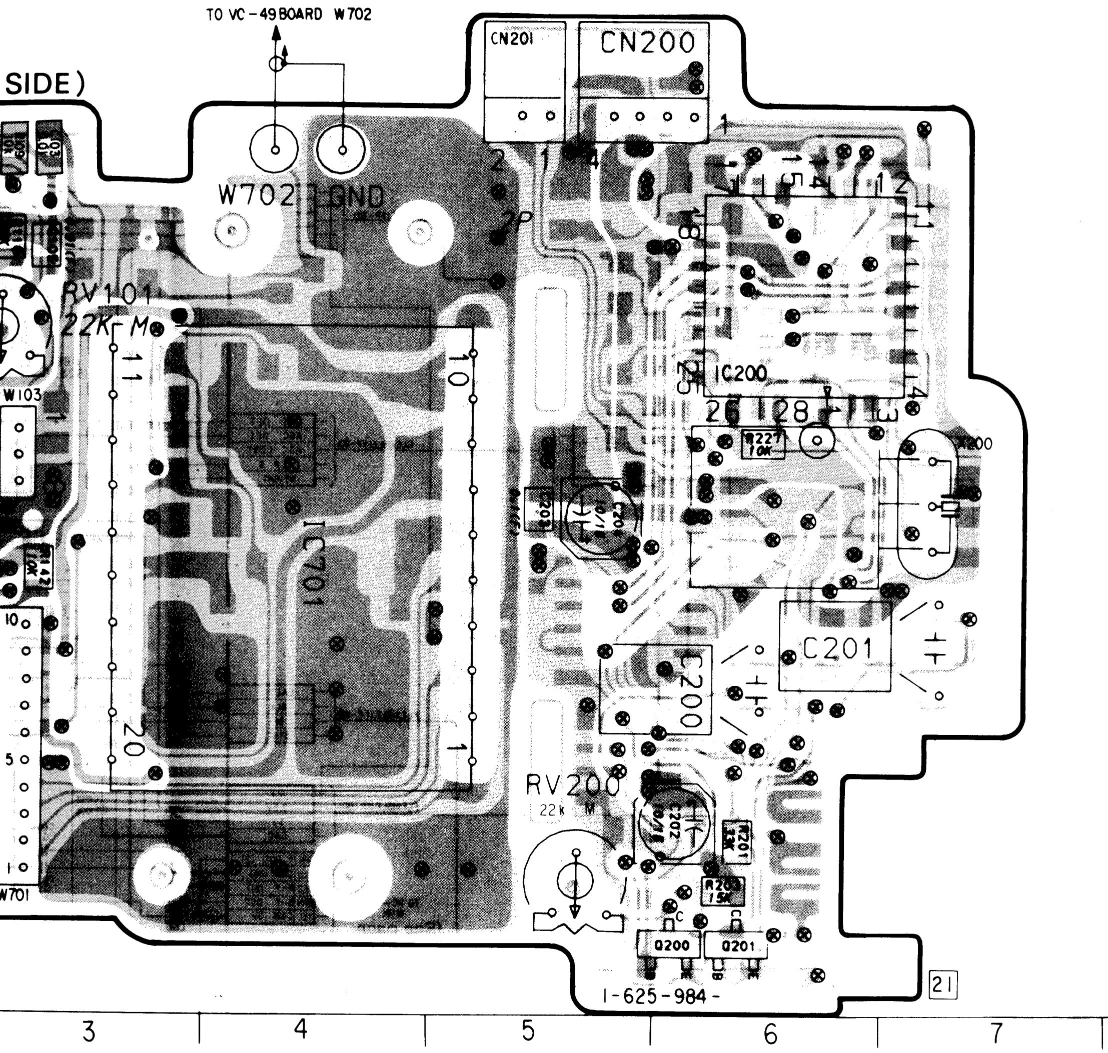




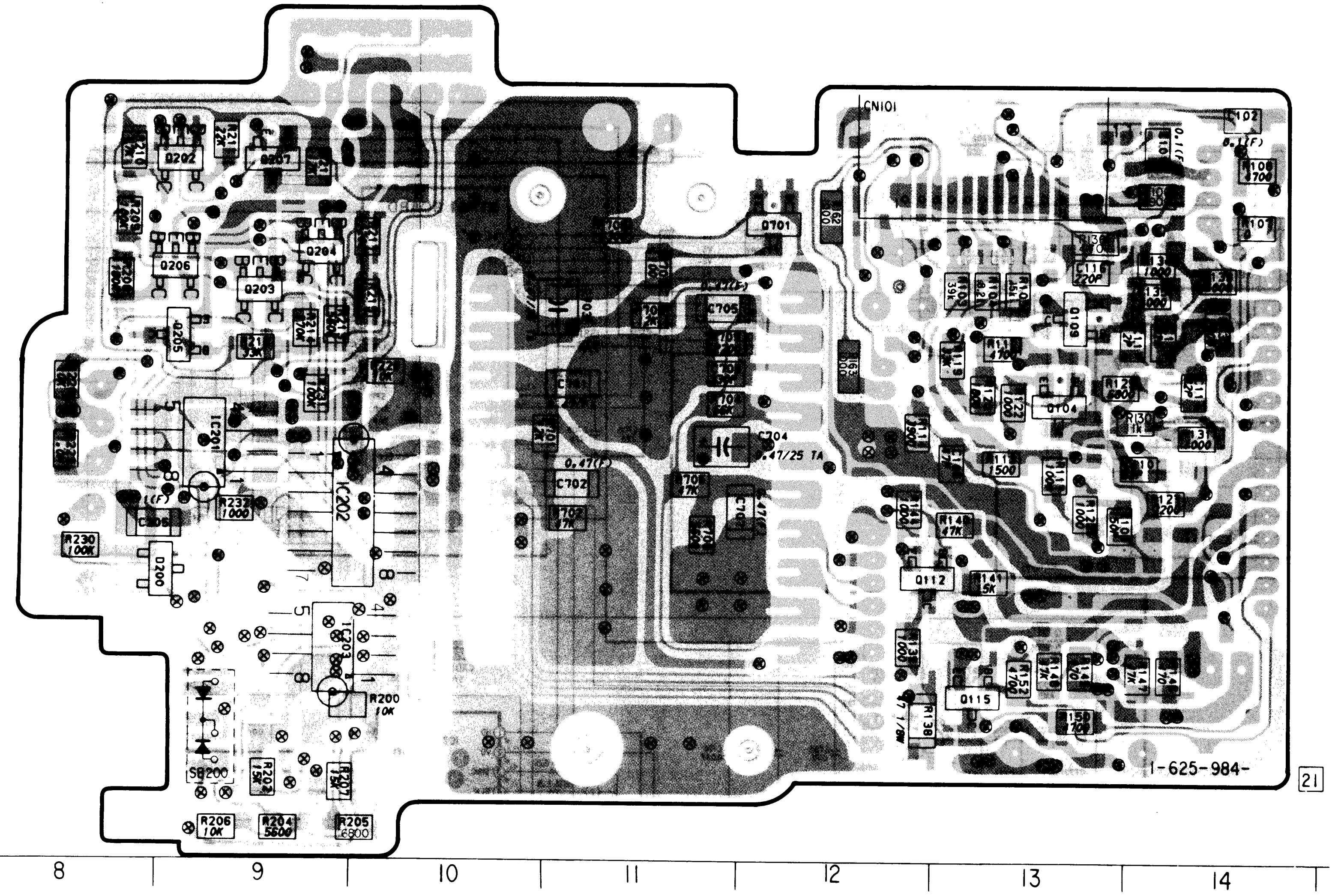

VC-48 BOARD (COMPONENT SIDE)
TO VC-49 BOARD W702
W702
GND
CN201
CN200
CN104
IC101
RV101 22K-M
W101
W102
W103
IC701
IC200
X200
C201
C200
RV200 22k M
CN105
TP100
TP101
W701
Q200
Q201
1-625-984-
21
A
B
C
D
E
1
2
3
4
5
6
7


ZOOM POTENTION UNIT
100k
CN4
CN3
M905 FOCUS MOTOR
CCD FOCUS SENSOR
IC4
GND
AGC/V REF
V OUT
VDD
OT
DS
OR
O3
O2
O1
CN1
AF-32 BOARD (COMPONENT SIDE)
VR2
VR1
VR3
CN2
C6
C3
C9
IC1
IC3
X1
1-622-930-
A
B
1
2
3
4

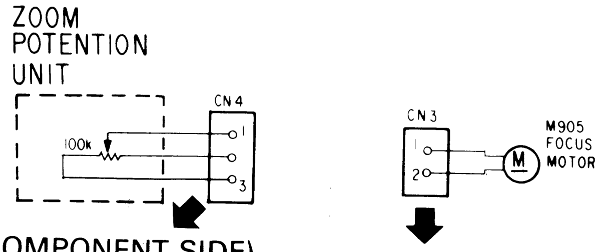
) WHITE BALANCE) PRINTED WIRING BOARDS


SIDE)
TO VC-49 BOARD W702
CN201
CN200
W702
GND
RV101
22K M
IC701
IC200
C201
C200
RV200
22k M
Q200
Q201
1-625-984-
21
3
4
5
6
7

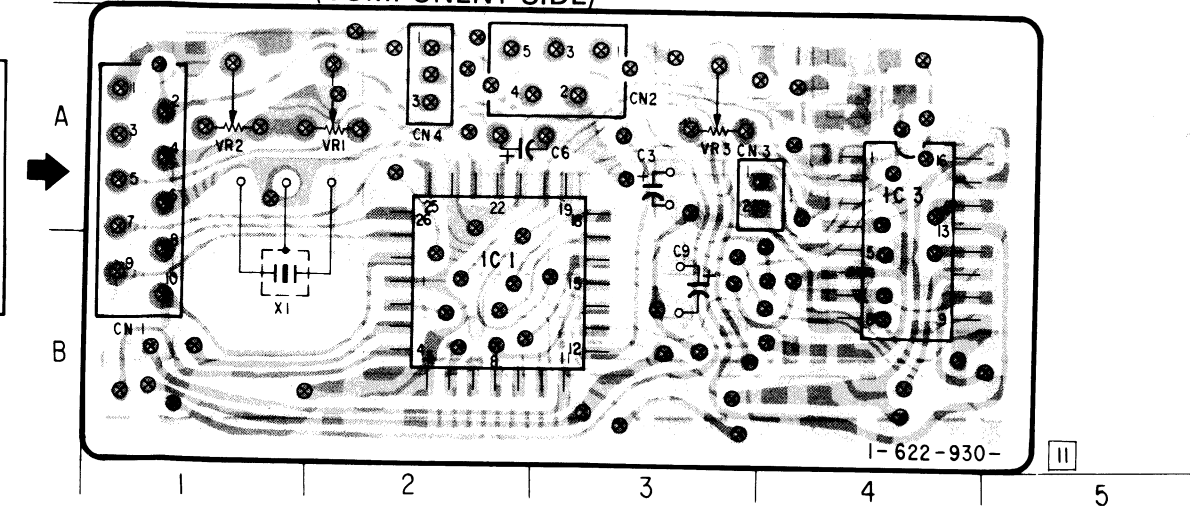
VC-48 BOARD(CONDUCTOR SIDE)


CN101
IC201
IC202
IC203
C704
0.47/25 TA
C702
C705
Q701
Q202
Q203
Q204
Q205
Q206
Q207
Q104
Q112
Q115
D200
SB200
R200 10K
R206 10K
R204 5600
R205 6800
R230 100K
R232 1000
1-625-984-
21
8
9
10
11
12
13
14

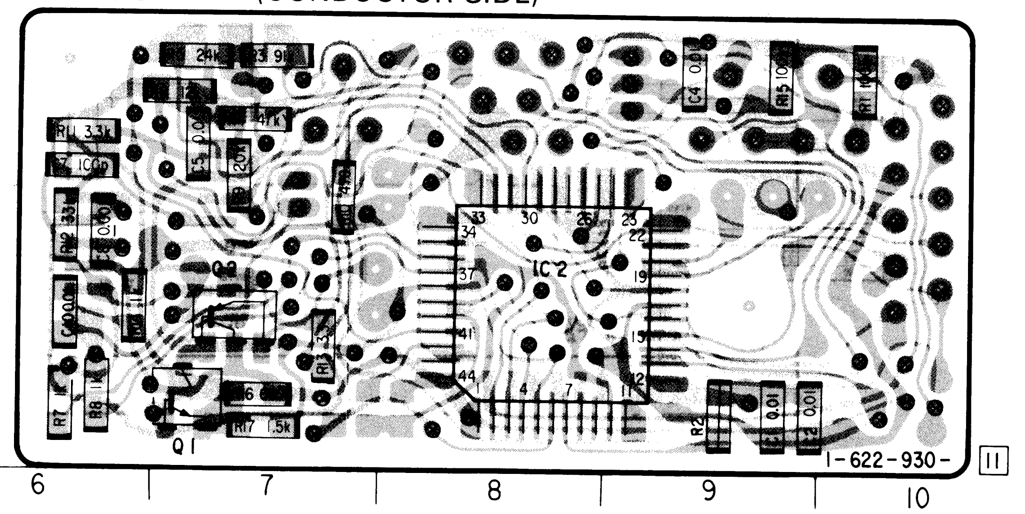
CN101	A-12
CN104	A-1
CN105	D-1
CN200	A-5
CN201	A-5
D200	C-9
IC101	B-2
IC200	B-6
IC201	C-9
IC202	C-9
IC203	D-9
IC701	C-4
Q101	C-2
Q102	C-2
Q103	B-2
Q104	C-13
Q105	C-1
Q106	C-1
Q107	B-2
Q108	B-1
Q109	B-13
Q111	D-2
Q112	C-12
Q113	C-2
Q114	C-2
Q115	D-13
Q116	D-1
Q117	D-2
Q200	E-6
Q201	E-6
Q202	A-9
Q203	B-9
Q204	B-9
Q205	B-9
Q206	B-9
Q207	A-9
Q701	B-12
RV101	B-3
RV200	D-5
TP100	D-1
TP101	D-2


ZOOM
POTENTION
UNIT
CN4
100k
1
2
3
CN3
1
2
M905
FOCUS
MOTOR
M

AF-32 BOARD (COMPONENT SIDE)


A
B
CN1
VR2
VR1
CN4
CN2
C6
C3
VR3
CN3
IC1
IC3
C9
X1
1-622-930-
11
1
2
3
4
5

AF-32 BOARD(CONDUCTOR SIDE)

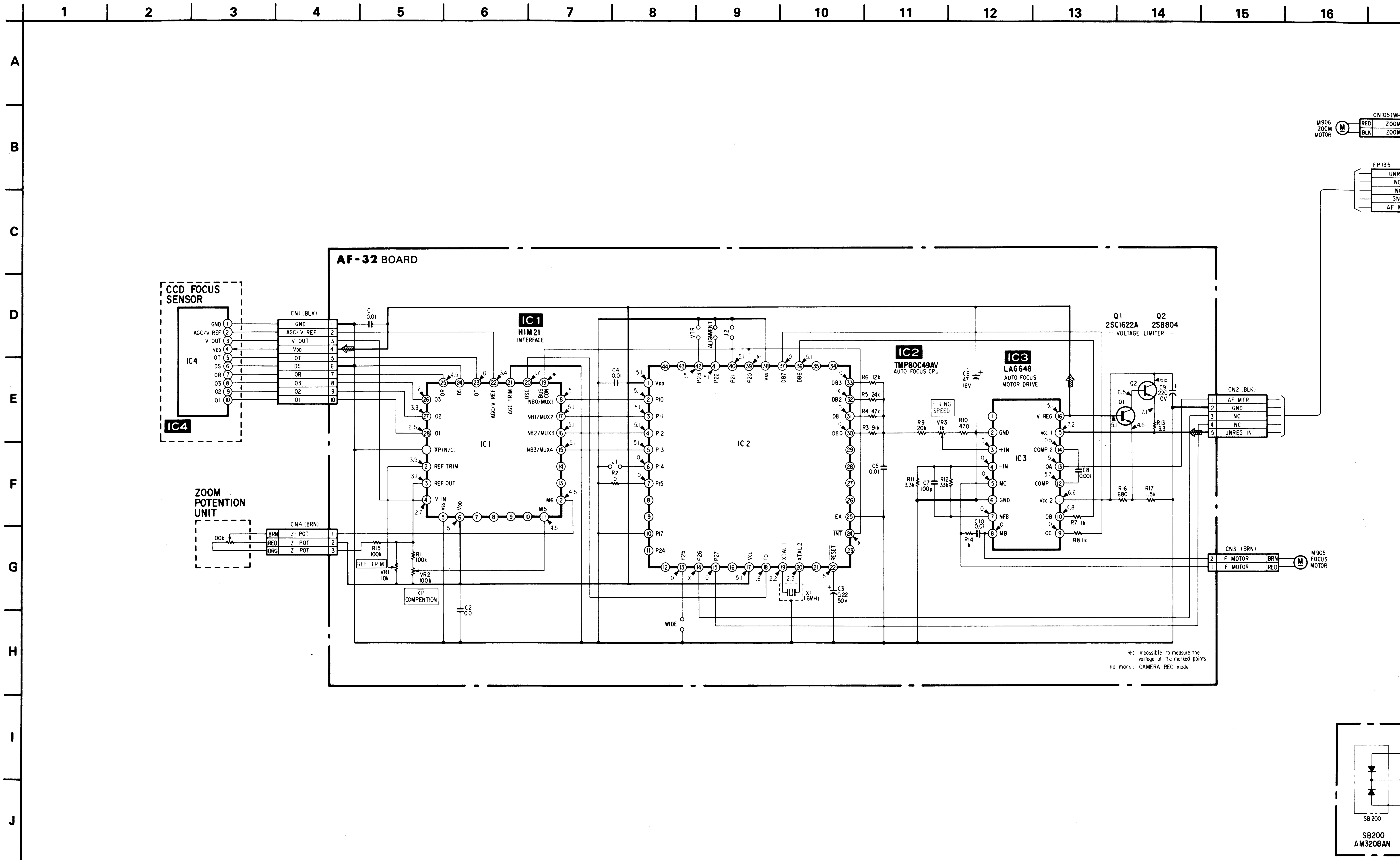

IC2
Q1
R17 1.5k
1-622-930-
11
6
7
8
9
10

CN1	A-1
CN2	A-3
CN3	A-4
CN4	A-2
IC1	B-2
IC2	B-8
IC3	A-4
Q1	B-7
Q2	B-7
VR1	A-2
VR2	A-1

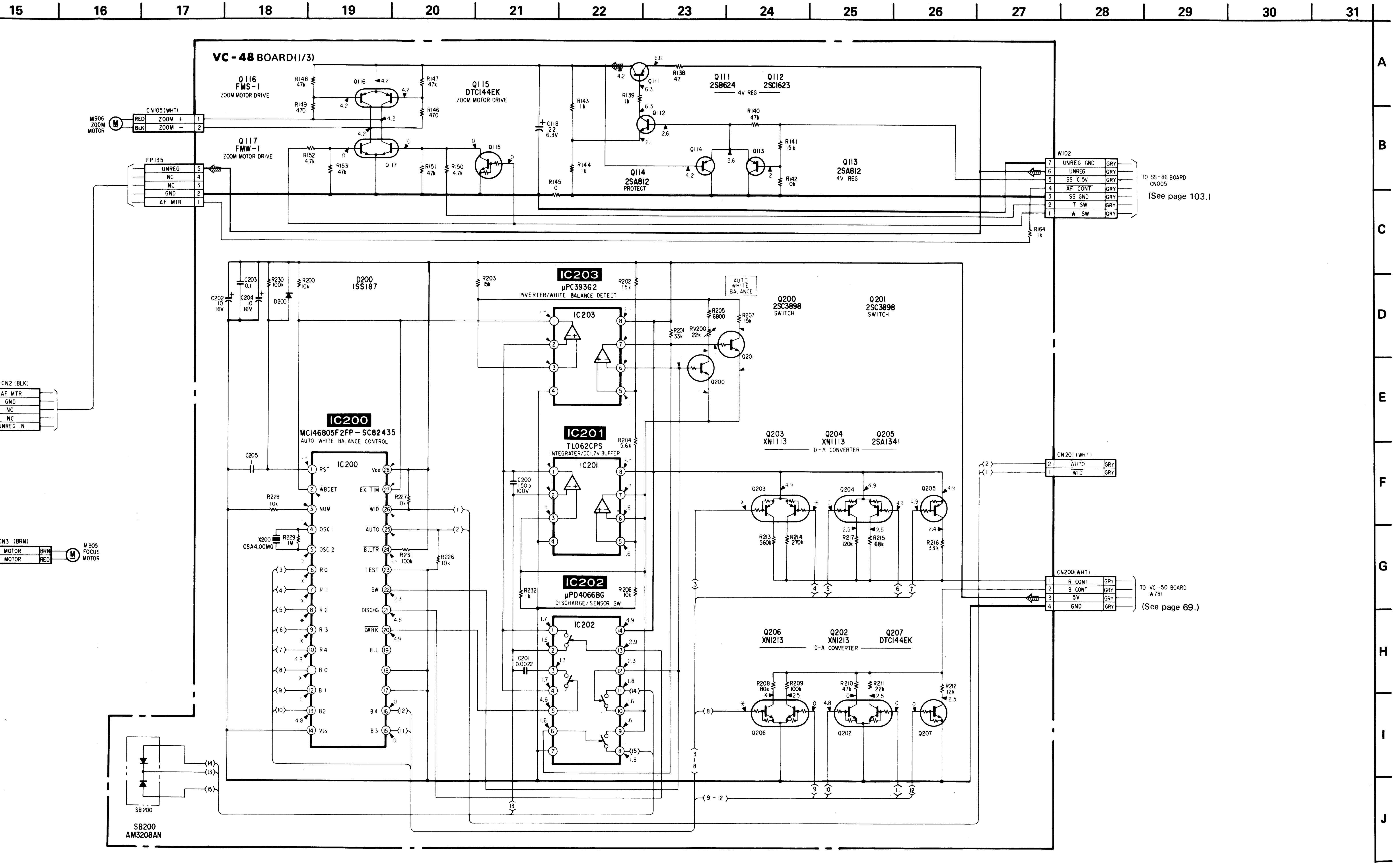
AF-32 (AUTO FOCUS CONTROL), VC-48 (ZOOM MOTOR CONTROL, AUTO WHITE BALANCE) SCHEMATIC DIAGRAM

– Ref. No. AF-32, VC-48 BOARDS: 2,000 series –

CAMERA(2)



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
AF-32 BOARD
CCD FOCUS SENSOR
IC4
GND
AGC/V REF
V OUT
VDD
OT
DS
OR
O3
O2
O1
CN1 (BLK)
C1 0.01
IC1
HIM21
INTERFACE
OR
DS
OT
AGC/V REF
AGC TRIM
OSC
BUS COM
NB0/MUX1
NB1/MUX2
NB2/MUX3
NB3/MUX4
M6
M5
XP(IN/C)
REF TRIM
REF OUT
V IN
VSS
VDD
ZOOM POTENTION UNIT
100k
CN4 (BRN)
BRN
RED
ORG
Z POT
R15 100k
REF TRIM
VR1 10k
R1 100k
VR2 100k
XP COMPENTION
C2 0.01
C4 0.01
J1
R2 0
IC2
TMP80C49AV
AUTO FOCUS CPU
VTR
ALIGNMENT
J2
P23
P22
P21
P20
VSS
DB7
DB6
DB3
DB2
DB1
DB0
EA
INT
RESET
P10
P11
P12
P13
P14
P15
P17
P24
P25
P26
P27
VCC
T0
XTAL 1
XTAL 2
X1 1.6MHz
C3 0.22 50V
WIDE
R6 12k
R5 24k
R4 47k
R3 91k
C5 0.01
F RING SPEED
R9 20k
VR3 1k
R10 470
R11 3.3k
C7 100p
R12 33k
C6 47 16V
IC3
LAG648
AUTO FOCUS MOTOR DRIVE
GND
+IN
-IN
MC
NFB
MB
V REG
VCC 1
COMP 2
OA
COMP 1
VCC 2
OB
OC
C8 0.001
C10 0.01
R14 1k
R7 1k
R8 1k
Q1 2SC1622A
Q2 2SB804
—VOLTAGE LIMITER—
C9 220 10V
R13 3.3
R16 680
R17 1.5k
CN2 (BLK)
AF MTR
GND
NC
NC
UNREG IN
CN3 (BRN)
F MOTOR
BRN
RED
M905 FOCUS MOTOR
M906 ZOOM MOTOR
CN105 (WH
RED
BLK
ZOOM
ZOOM
FP135
UNR
NC
NC
GN
AF
SB200
SB200 AM3208AN
*: Impossible to measure the voltage at the marked points.
no mark: CAMERA REC mode


15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
A
B
C
D
E
F
G
H
I
J
VC-48 BOARD(1/3)
Q116 FMS-1 ZOOM MOTOR DRIVE
Q117 FMW-1 ZOOM MOTOR DRIVE
Q115 DTC144EK ZOOM MOTOR DRIVE
Q111 2SB624
Q112 2SC1623
4V REG
Q114 2SA812 PROTECT
Q113 2SA812 4V REG
M906 ZOOM MOTOR
CN105(WHT)
RED ZOOM + 1
BLK ZOOM − 2
FP135
UNREG 5
NC 4
NC 3
GND 2
AF MTR 1
R148 47k
R149 470
R147 47k
R146 470
R152 4.7k
R153 47k
R151 47k
R150 4.7k
C118 22 6.3V
R143 1k
R144 1k
R145 0
R138 47
R139 1k
R140 47k
R141 15k
R142 10k
R164 1k
W102
7 UNREG GND GRY
6 UNREG GRY
5 SS C 5V GRY
4 AF CONT GRY
3 SS GND GRY
2 T SW GRY
1 W SW GRY
TO SS-86 BOARD CN005
(See page 103.)
CN2 (BLK)
AF MTR
GND
NC
NC
UNREG IN
CN3 (BRN)
MOTOR BRN
MOTOR RED
M905 FOCUS MOTOR
IC200
MC146805F2FP-SC82435
AUTO WHITE BALANCE CONTROL
RST
WBDET
NUM
OSC 1
OSC 2
R 0
R 1
R 2
R 3
R 4
B 0
B 1
B2
Vss
VDD
EX TIM
WID
AUTO
B.LTR
TEST
SW
DISCHG
DARK
B.L
B 4
B 3
C202 10 16V
C203 0.1
C204 10 16V
R230 100k
R200 10k
D200 1SS187
C205
R228 10k
X200 CSA4.00MG
R229 1M
R227 10k
R231 100k
R226 10k
IC203
μPC393G2
INVERTER/WHITE BALANCE DETECT
R203 15k
R202 15k
R205 6800
R207 15k
R201 33k
RV200 22k
AUTO WHITE BALANCE
Q200 2SC3898 SWITCH
Q201 2SC3898 SWITCH
IC201
TL062CPS
INTEGRATER/DC1.7V BUFFER
R204 5.6k
C200 150p 100V
IC202
μPD4066BG
DISCHARGE/SENSOR SW
R232 1k
R206 10k
C201 0.0022
Q203 XN1113
Q204 XN1113
Q205 2SA1341
D-A CONVERTER
R213 560k
R214 270k
R217 120k
R215 68k
R216 33k
CN201 (WHT)
2 AUTO GRY
1 WID GRY
CN200(WHT)
1 R CONT GRY
2 B CONT GRY
3 5V GRY
4 GND GRY
TO VC-50 BOARD W781
(See page 69.)
Q206 XN1213
Q202 XN1213
Q207 DTC144EK
D-A CONVERTER
R208 180k
R209 100k
R210 47k
R211 22k
R212 12k
SB200
SB200 AM3208AN

4-4. SS-86 (DIGITAL TITLER), VC-48 (TITLE MIX) PRINTED WIRING BOARDS

– Ref. No. SS-86, VC-48 BOARDS: 3,000 series –

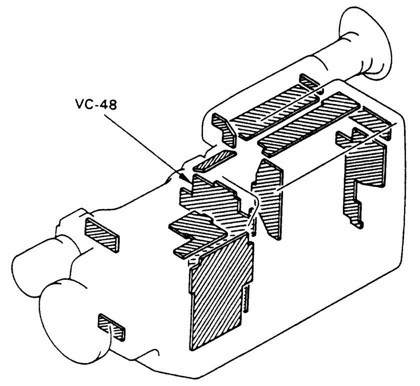
Note:

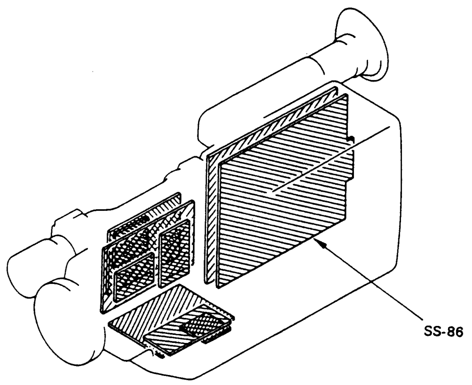
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

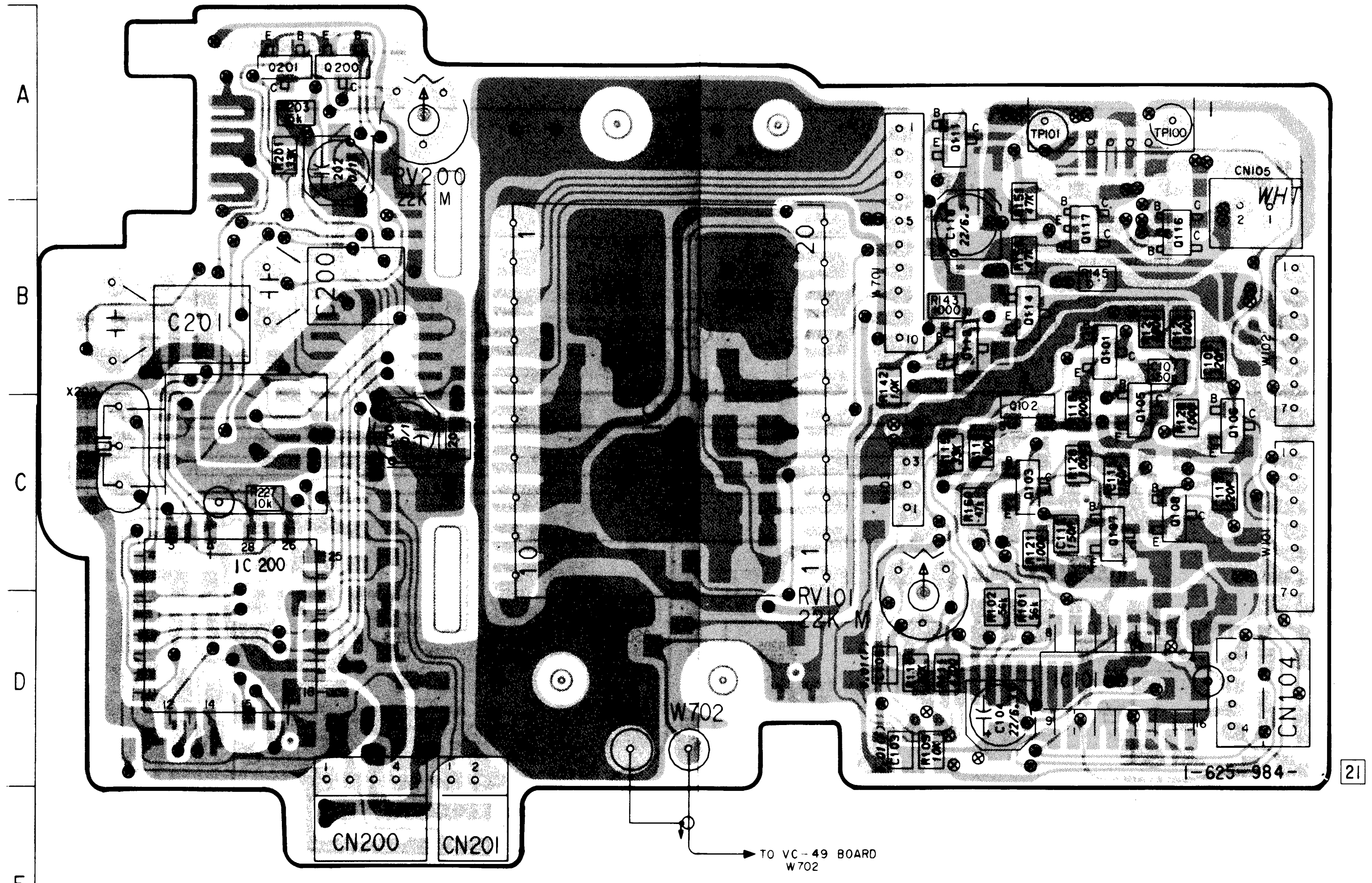
- Digital transistor (SS-86: Q203, Q204, Q205, Q206) is transistor with resistor. Refer to the SS-86 board schematic diagram for digital transistor.



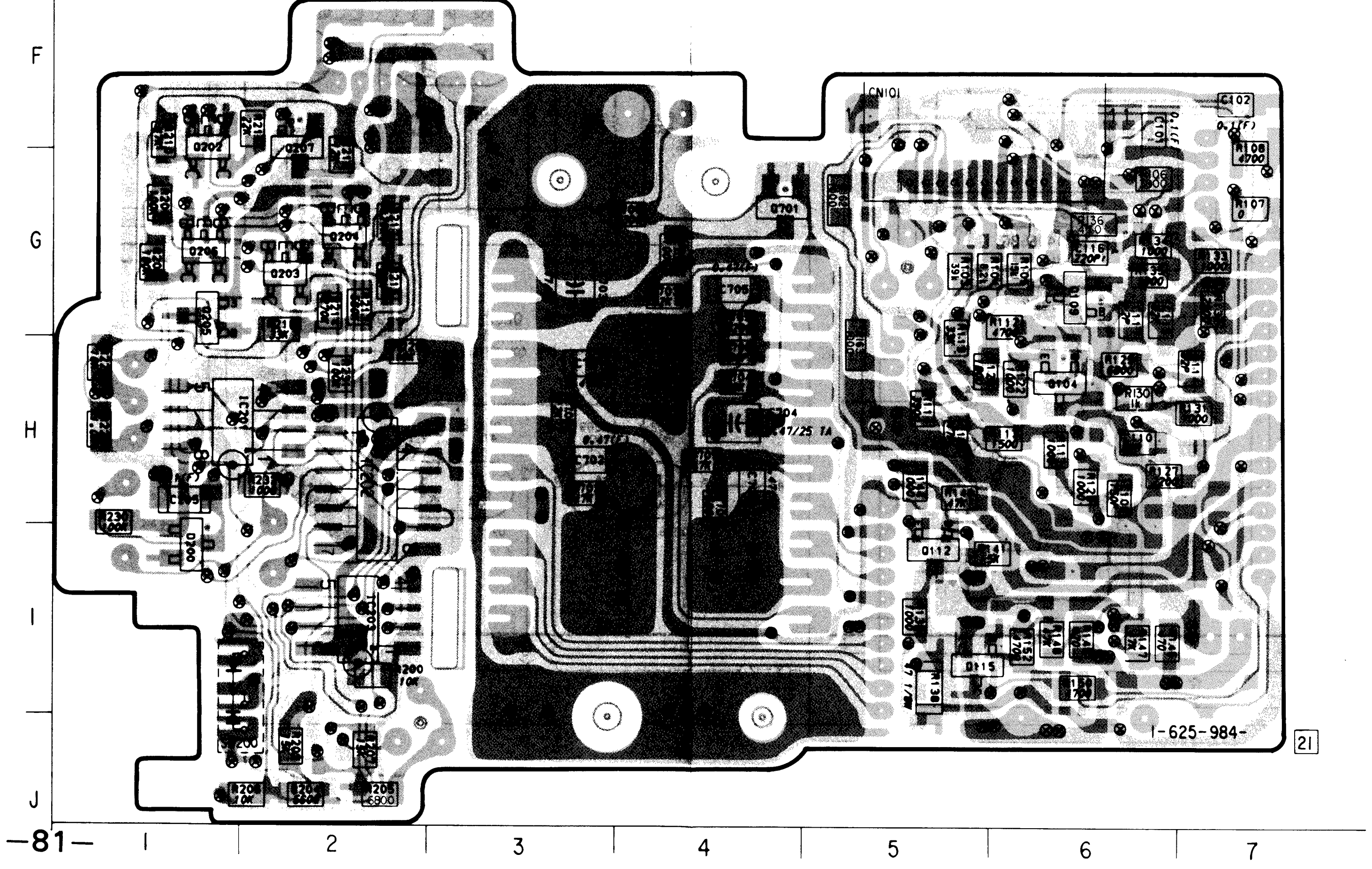


CN101	F-5
CN104	D-7
CN105	A-7
CN200	E-2
CN201	E-3
D200	I-1
IC101	D-6
IC200	D-1
IC201	H-1
IC202	H-2
IC203	I-2
IC701	C-4
Q101	B-6
Q102	C-6
Q103	C-6
Q104	H-6
Q105	C-6
Q106	C-7
Q107	C-6
Q108	C-6
Q109	G-6
Q111	A-5
Q112	I-5
Q113	B-5
Q114	B-6
Q115	I-5
Q116	B-6
Q117	B-6
Q200	A-2
Q201	A-2
Q202	F-1
Q203	G-2
Q204	G-2
Q205	G-1
Q206	G-1
Q207	G-2
Q701	G-4
RV101	D-5
RV200	A-2
TP100	A-6
TP101	A-6

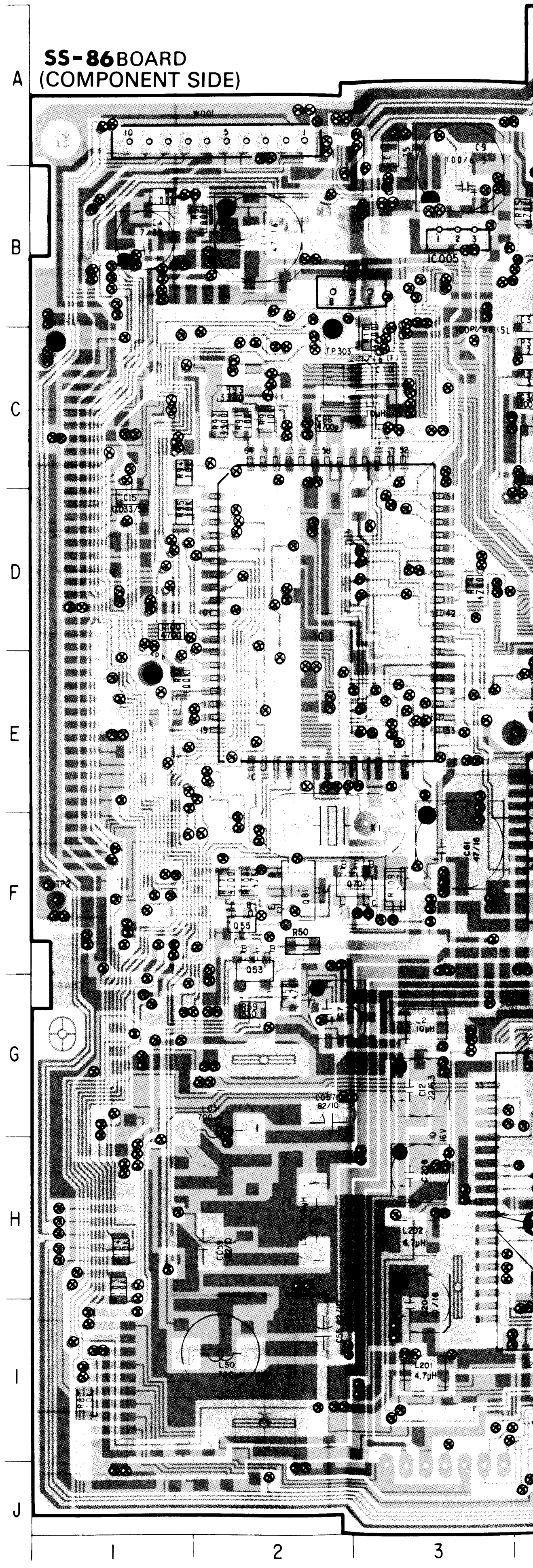
VC-48 BOARD (COMPONENT SIDE)

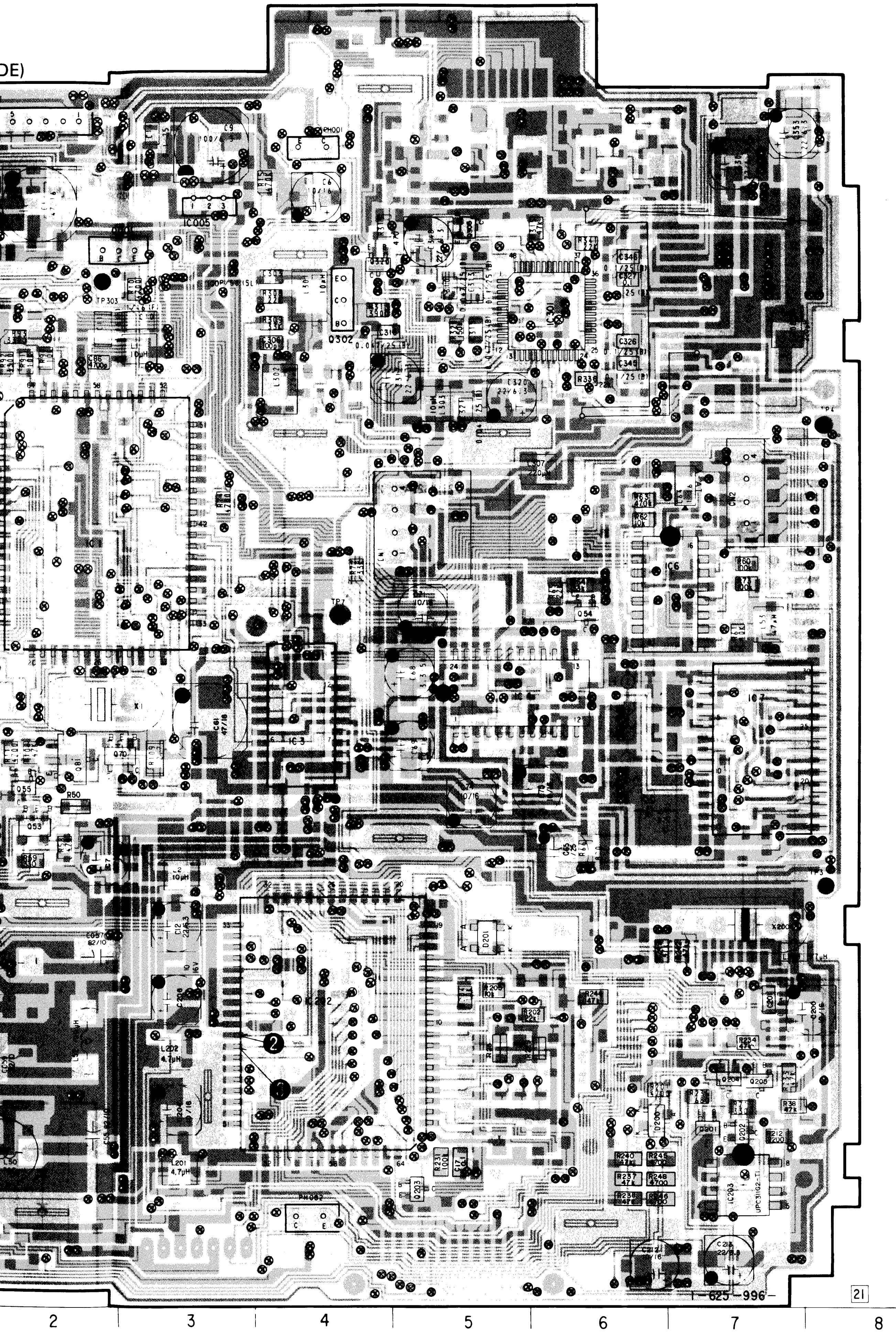

A
B
C
D
Q201
Q200
RV200
22K M
C201
L200
X200
IC 200
CN200
CN201
TP101
TP100
CN105
WHT
RV101
22K M
W702
CN104
1-625-984-
21
TO VC-49 BOARD
W702

VC-48 BOARD(CONDUCTOR SIDE)

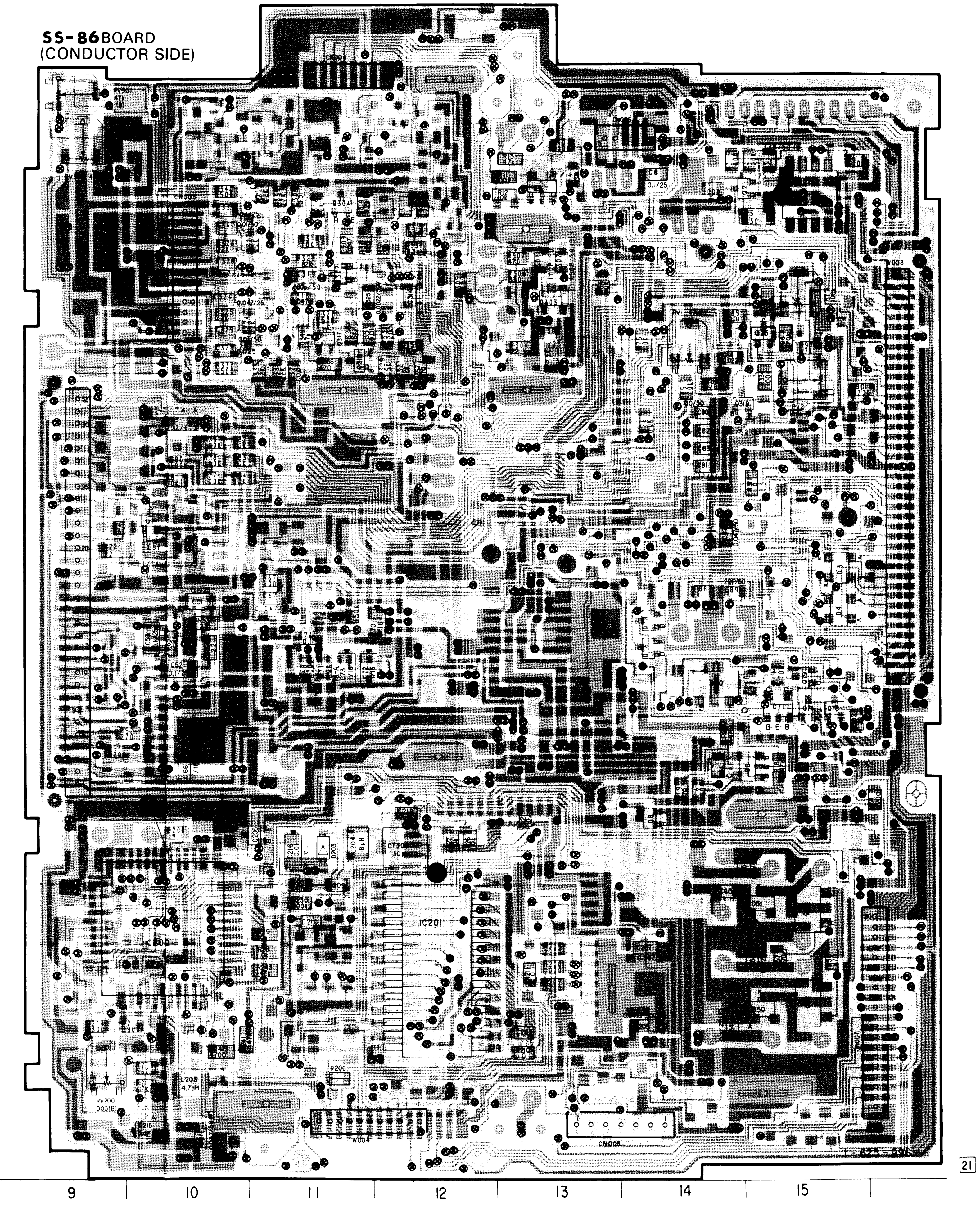

E
F
G
H
I
J
1
2
3
4
5
6
7
CN101
Q202
Q203
Q204
Q104
Q112
Q115
1-625-984-
21

SS-86BOARD
(COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
J
1
2
3
IC005
TP303
L202
4.7μH
L201
4.7μH


DE)
IC005
TP303
Q302
IC301
TP7
IC3
IC6
IC202
IC203
D201
X1
R50
Q53
Q55
L201
4.7μH
L202
4.7μH
2
21
1-625-996-
2
3
4
5
6
7
8

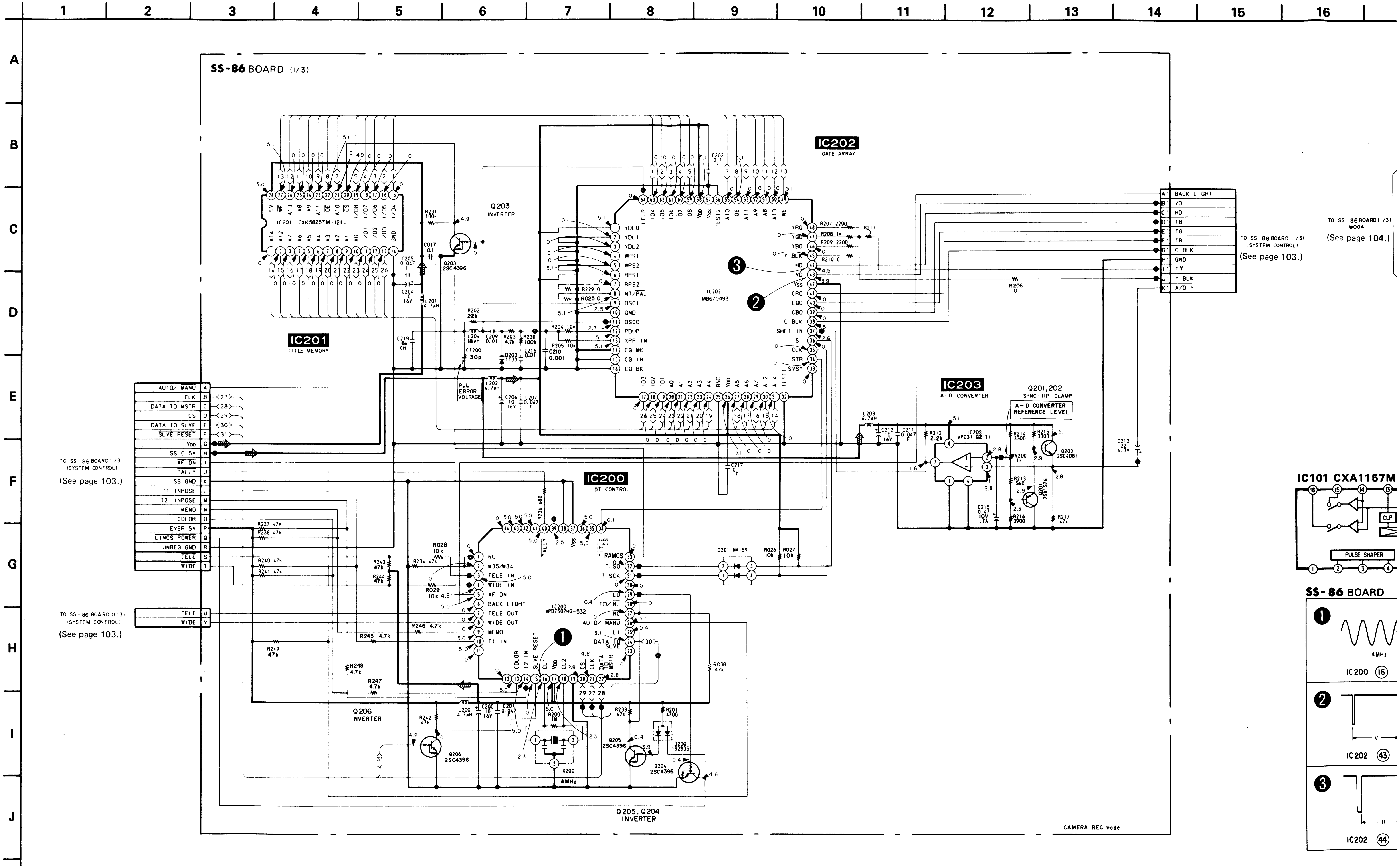
SS-86 BOARD
(CONDUCTOR SIDE)


RV301
47k
(B)
CN003
CN004
IC201
IC200
CT200
L203
4.7μH
RV200
100(B)
R206
CN006
D003
21
1-625-996-
9
10
11
12
13
14
15

CN001	D-5
CN002	D-7
CN003	C-10
CN004	A-11
CN005	J-13
CN006	B-14
CN007	I-16
CT200	G-12
D003	E-15
D004	E-15
D050	I-15
D051	H-15
D200	I-6
D201	G-5
D203	G-11
IC001	D-2
IC002	B-15
IC003	F-4
IC004	F-5
IC005	B-3
IC006	E-7
IC007	F-7
IC200	H-10
IC201	H-12
IC202	H-4
IC203	I-7
IC301	C-6
Q001	B-2
Q002	B-15
Q005	B-13
Q006	G-15
Q007	E-10
Q008	G-14
Q051	I-15
Q052	H-15
Q053	F-2
Q054	E-6
Q055	F-2
Q070	F-2
Q071	F-15
Q073	F-15
Q074	F-15
Q075	C-15
Q076	F-14
Q078	F-14
Q079	F-15
Q080	F-14
Q081	F-2
Q201	I-7
Q202	I-7
Q203	I-5
Q204	H-7
Q205	H-7
Q206	G-11
Q302	C-4
Q303	C-13
Q304	B-11
Q305	B-5
Q307	C-11
Q317	C-11
Q318	C-11
Q319	D-15
Q320	B-4
RV001	C-14
RV002	D-15
RV003	C-15
RV200	I-9
RV301	A-9
RV302	B-9
TP001	C-1
TP002	F-1
TP003	G-8
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-2

SS-86 (DIGITAL TITLER), VC-48 (TITLE MIX) SCHEMATIC DIAGRAM

– Ref. No. SS-86, VC-48 BOARDS: 3,000 series –


1
2
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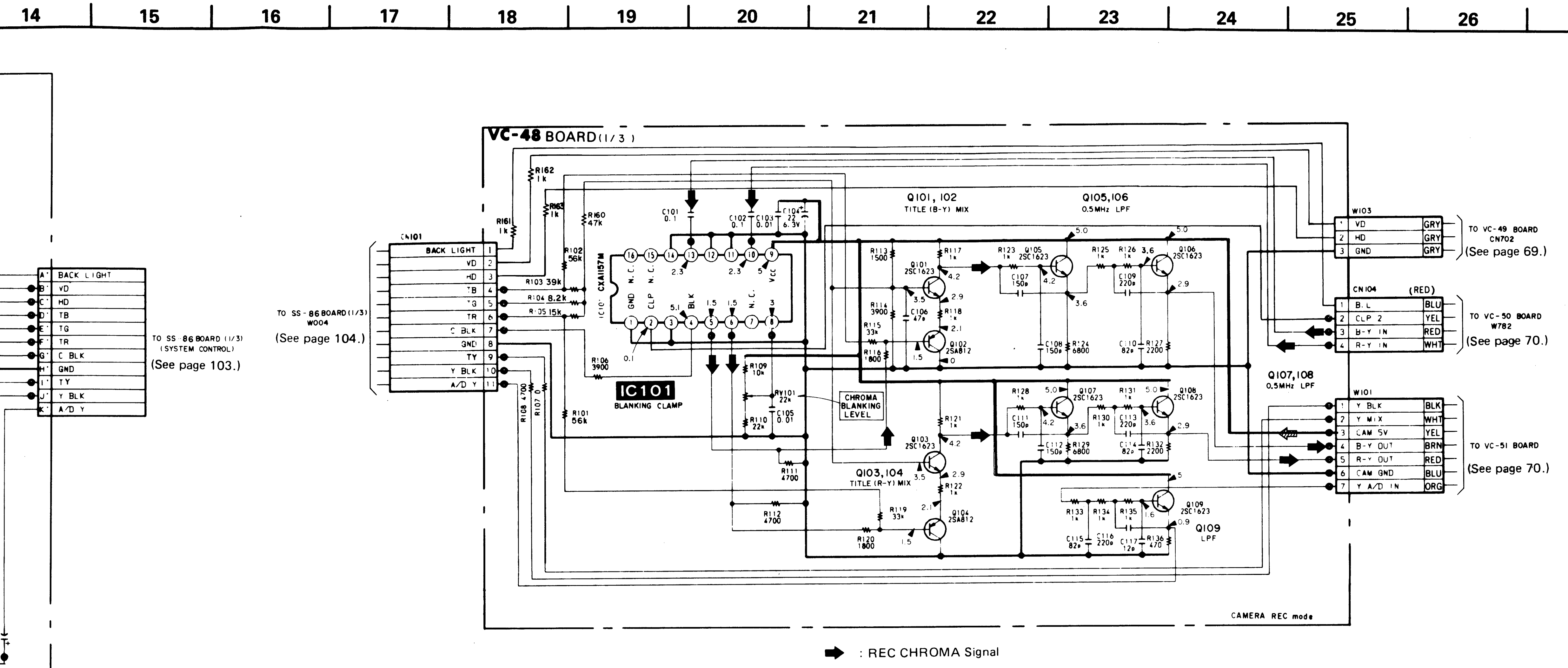
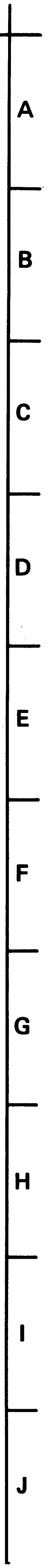
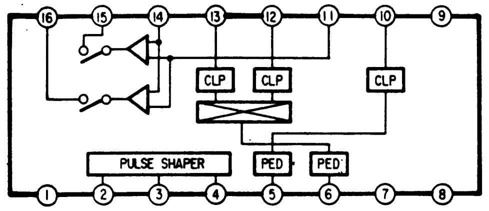
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
SS-86 BOARD (1/3)
IC201
TITLE MEMORY
IC201 CXK58257M-12LL
Q203
INVERTER
Q203 2SC4396
IC202
GATE ARRAY
IC202 MB670493
YDL0
YDL1
YDL2
WPS1
WPS2
RPS1
RPS2
NT/PAL
OSCI
GND
OSCO
PDUP
XPP IN
CG MK
CG IN
CG BK
YRO
YGO
YBO
Y BLK
HD
VD
VSS
CRO
CGO
CBO
C BLK
SHFT IN
SI
CLK
STB
SVSY
PLL ERROR VOLTAGE
IC203
A-D CONVERTER
IC203 μPC3116 2-T1
Q201, 202
SYNC-TIP CLAMP
A-D CONVERTER REFERENCE LEVEL
Q201 2SA1576
Q202 2SC4081
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
TO SS-86 BOARD (1/3) (SYSTEM CONTROL)
(See page 103.)
TO SS-86 BOARD (1/3) W004
(See page 104.)
AUTO/MANU
CLK
DATA TO MSTR
CS
DATA TO SLVE
SLVE RESET
VDD
SS C 5V
AF ON
TALLY
SS GND
T1 INPOSE
T2 INPOSE
MEMO
COLOR
EVER 5V
LINCS POWER
UNREG GND
TELE
WIDE
TO SS-86 BOARD (1/3) (SYSTEM CONTROL)
(See page 103.)
TO SS-86 BOARD (1/3) (SYSTEM CONTROL)
(See page 103.)
IC200
DT CONTROL
IC200 μPD7507HG-532
NC
M35/M34
TELE IN
WIDE IN
AF ON
BACK LIGHT
TELE OUT
WIDE OUT
MEMO
T1 IN
RAMCS
T. SO
T. SCK
LO
ED/NL
NL
AUTO/MANU
LI
DATA TO SLVE
COLOR
T2 IN
SLVE RESET
CL1
VDD
CL2
CS
CLK
DATA TO MSTR
D201 MA159
Q206
INVERTER
Q206 2SC4396
X200
4MHz
Q205 2SC4396
Q204 2SC4396
D200 1S2835
Q205, Q204
INVERTER
CAMERA REC mode
IC101 CXA1157M
CLP
PULSE SHAPER
SS-86 BOARD
❶
4MHz
IC200 ⑯
❷
V
IC202 ㊸
❸
H
IC202 ㊹

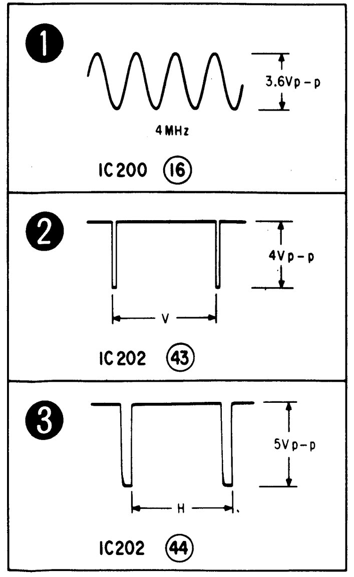

14
15
16
17
18
19
20
21
22
23
24
25
26
27
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
TO SS-86 BOARD (1/3)
(SYSTEM CONTROL)
(See page 103.)
TO SS-86 BOARD (1/3)
W004
(See page 104.)
CN101
VC-48 BOARD (1/3)
R162 1k
R161 1k
R163 1k
R160 47k
R102 56k
R103 39k
R104 8.2k
R105 15k
R106 3900
R108 4700
R107 0
R101 56k
IC101 CXA1157M
IC101
BLANKING CLAMP
C101 0.1
C102 0.1
C103 0.01
C104 22 6.3V
GND
CLP
BLK
VCC
N.C.
R109 10k
RV101 22k
R110 22k
C105 0.01
R111 4700
R112 4700
CHROMA BLANKING LEVEL
Q101, 102
TITLE (B-Y) MIX
Q105,106
0.5MHz LPF
Q101 2SC1623
Q102 2SA812
R113 1500
R114 3900
R115 33k
R116 1800
R117 1k
R118 1k
C106 47p
R123 1k
Q105 2SC1623
C107 150p
C108 150p
R124 6800
R125 1k
R126 1k
C109 220p
C110 82p
R127 2200
Q106 2SC1623
Q103,104
TITLE (R-Y) MIX
Q103 2SC1623
Q104 2SA812
R119 33k
R120 1800
R121 1k
R122 1k
R128 1k
Q107 2SC1623
C111 150p
C112 150p
R129 6800
R130 1k
R131 1k
C113 220p
C114 82p
R132 2200
Q108 2SC1623
Q107,108
0.5MHz LPF
R133 1k
R134 1k
R135 1k
C115 82p
C116 220p
C117 12p
R136 470
Q109 2SC1623
Q109 LPF
W103
VD GRY
HD GRY
GND GRY
TO VC-49 BOARD
CN702
(See page 69.)
CN104 (RED)
B.L BLU
CLP 2 YEL
B-Y IN RED
R-Y IN WHT
TO VC-50 BOARD
W782
(See page 70.)
W101
Y BLK BLK
Y MIX WHT
CAM 5V YEL
B-Y OUT BRN
R-Y OUT RED
CAM GND BLU
Y A/D IN ORG
TO VC-51 BOARD
(See page 70.)
CAMERA REC mode
: REC CHROMA Signal


A
B
C
D
E
F
G
H
I
J

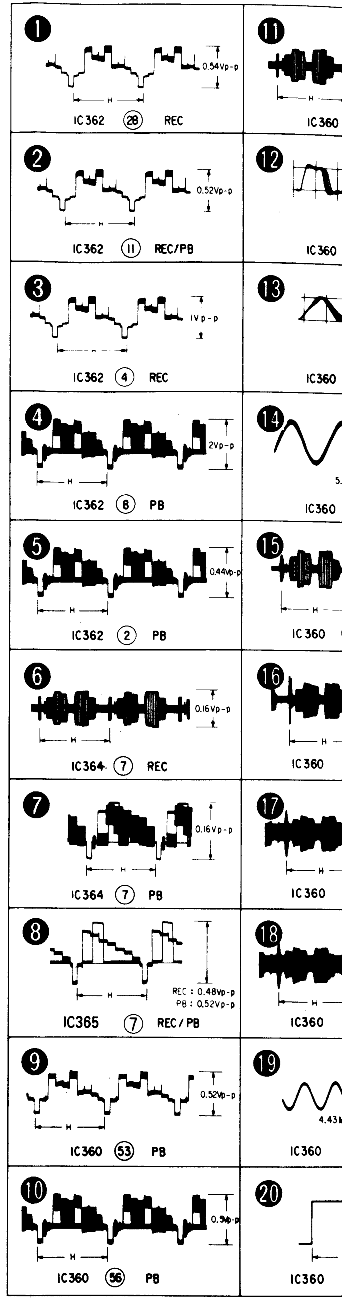
IC101 CXA1157M

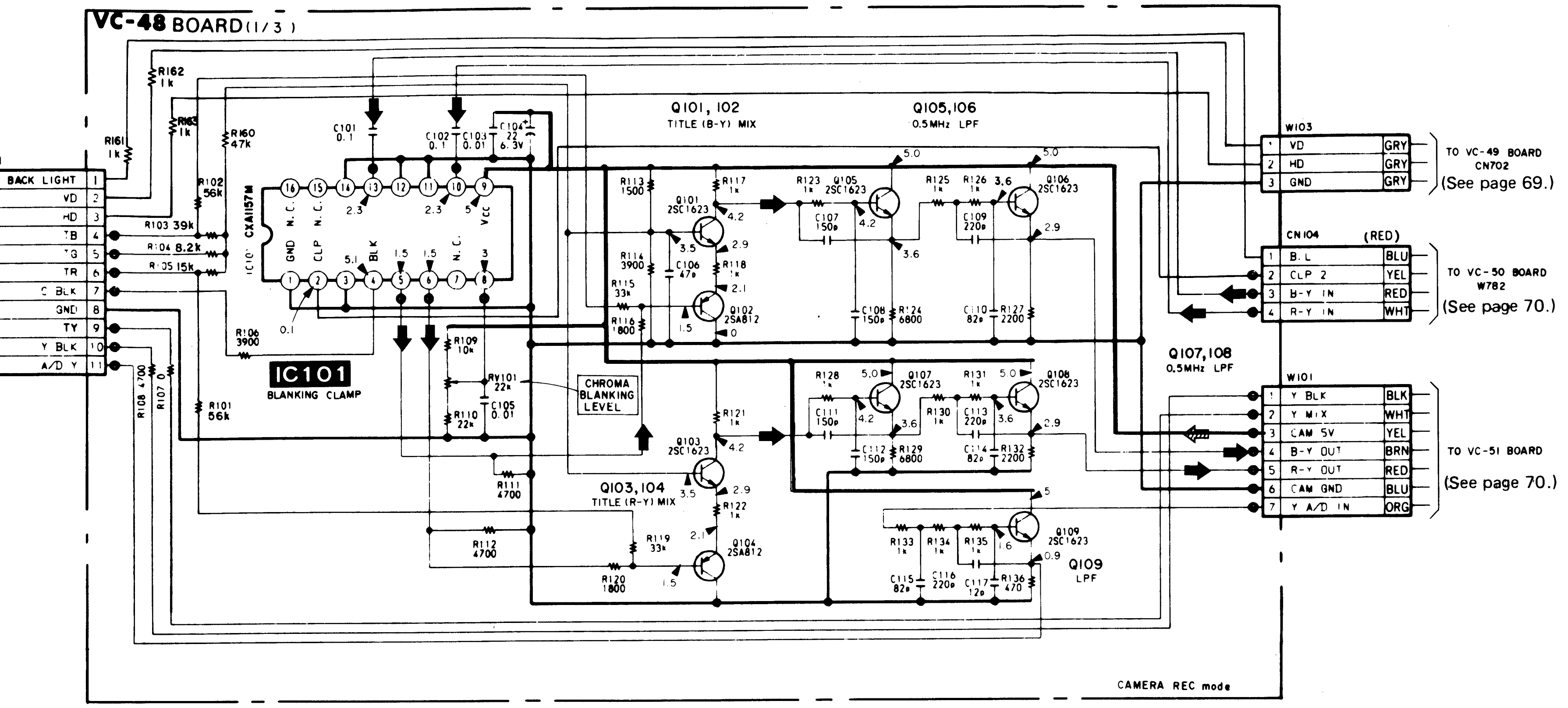

CLP
CLP
CLP
PULSE SHAPER
PED
PED

SS-86 BOARD

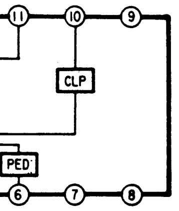


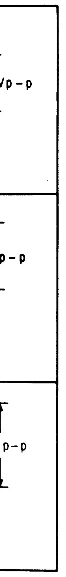
VA-41 BOARD



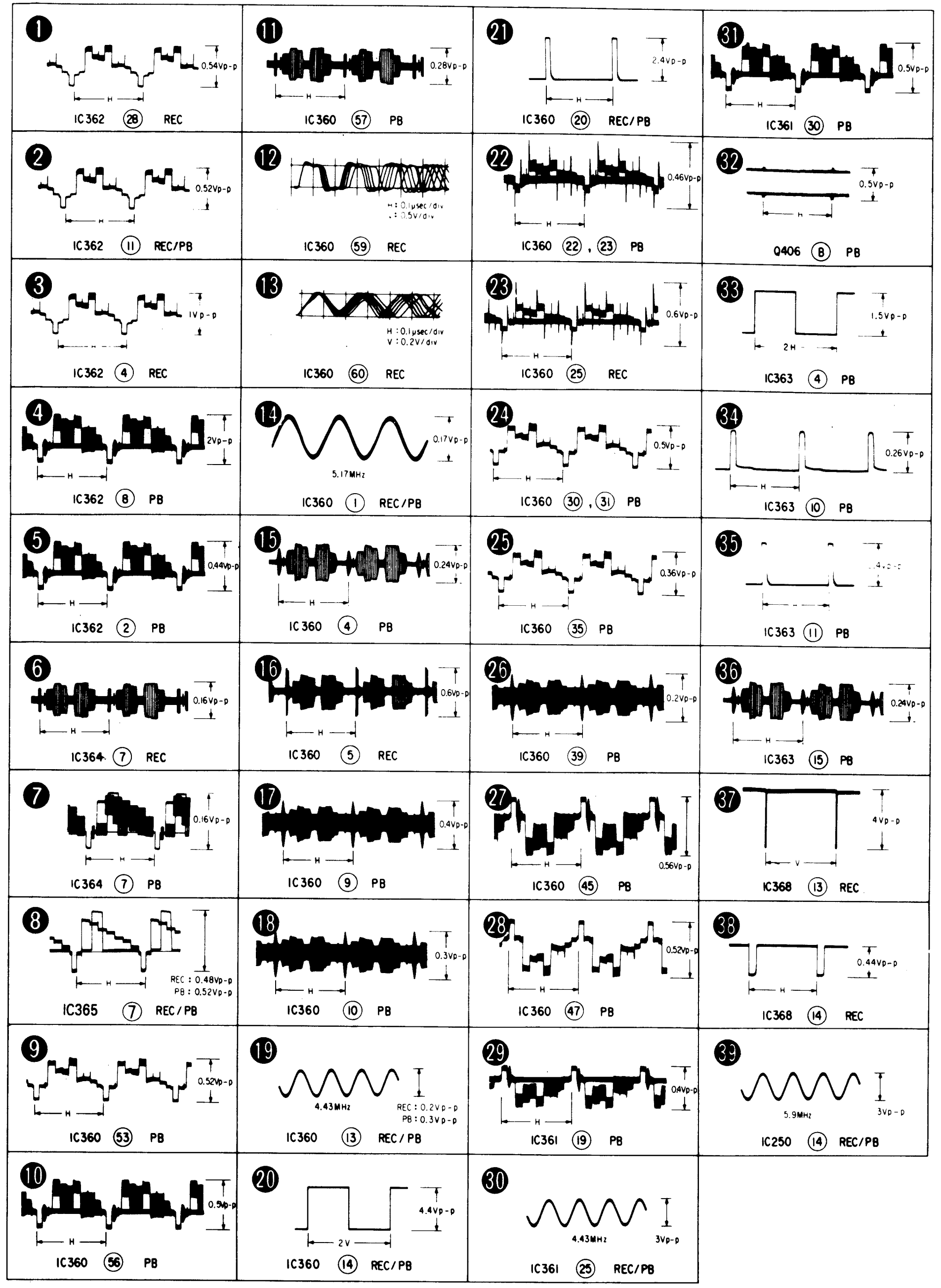

VC-48 BOARD (1/3)
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
R161 1k
R162 1k
R163 1k
R160 47k
R102 56k
R103 39k
R104 8.2k
R105 15k
R106 3900
R101 56k
R108 4700
R107 0
C101 0.1
C102 0.1
C103 0.01
C104 22 6.3V
IC101 CXA1157M
GND
CLP
BLK
N.C.
VCC
IC101
BLANKING CLAMP
R109 10k
RY101 22k
R110 22k
C105 0.01
R111 4700
R112 4700
CHROMA BLANKING LEVEL
Q101, 102
TITLE (B-Y) MIX
Q105,106
0.5MHz LPF
R113 1500
R114 3900
R115 33k
R116 1800
R117 1k
R118 1k
C106 47p
Q101 2SC1623
Q102 2SA812
R123 1k
Q105 2SC1623
C107 150p
C108 150p
R124 6800
R125 1k
R126 1k
C109 220p
C110 82p
R127 2200
Q106 2SC1623
Q107,108
0.5MHz LPF
R128 1k
C111 150p
C112 150p
R129 6800
Q107 2SC1623
R130 1k
R131 1k
C113 220p
C114 82p
R132 2200
Q108 2SC1623
Q103, 104
TITLE (R-Y) MIX
Q103 2SC1623
Q104 2SA812
R119 33k
R120 1800
R121 1k
R122 1k
R133 1k
R134 1k
R135 1k
C115 82p
C116 220p
C117 12p
R136 470
Q109 2SC1623
Q109
LPF
W103
VD GRY
HD GRY
GND GRY
TO VC-49 BOARD CN702
(See page 69.)
CN104 (RED)
B.L BLU
CLP 2 YEL
B-Y IN RED
R-Y IN WHT
TO VC-50 BOARD W782
(See page 70.)
W101
Y BLK BLK
Y MIX WHT
CAM 5V YEL
B-Y OUT BRN
R-Y OUT RED
CAM GND BLU
Y A/D IN ORG
TO VC-51 BOARD
(See page 70.)
CAMERA REC mode

➡ : REC CHROMA Signal

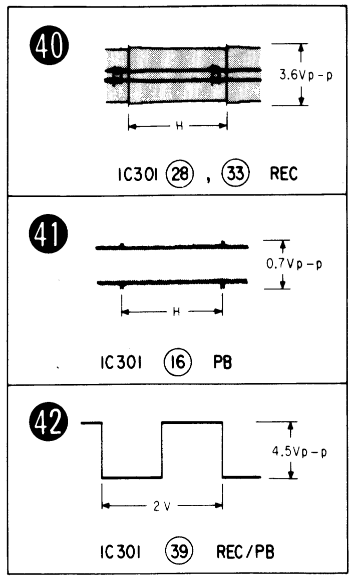




VA-41 BOARD



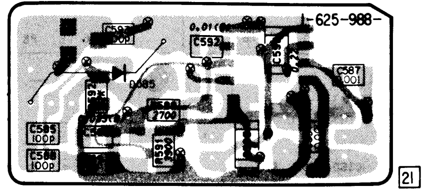
SS-86 BOARD



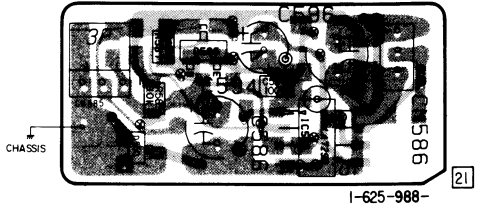
4-5. SS-86 (REC/PB AMP), VA-41 (VIDEO/AUDIO SIGNAL PROCESS), MC-28 (MIC AMP) PRINTED WIRING BOARDS

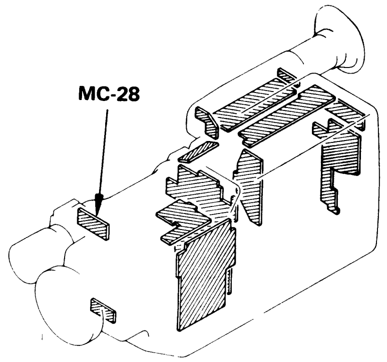
– Ref. No. SS-86, VA-41, MC-28 BOARDS: 4,000 series –

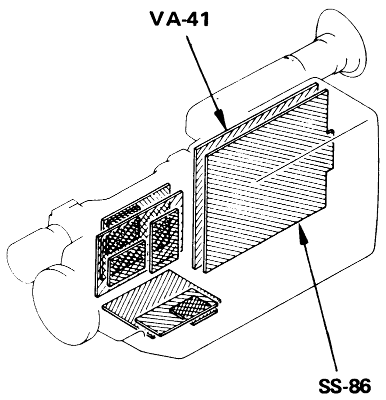
MC-28 BOARD (CONDUCTOR SIDE)



MC-28 BOARD (COMPONENT SIDE)





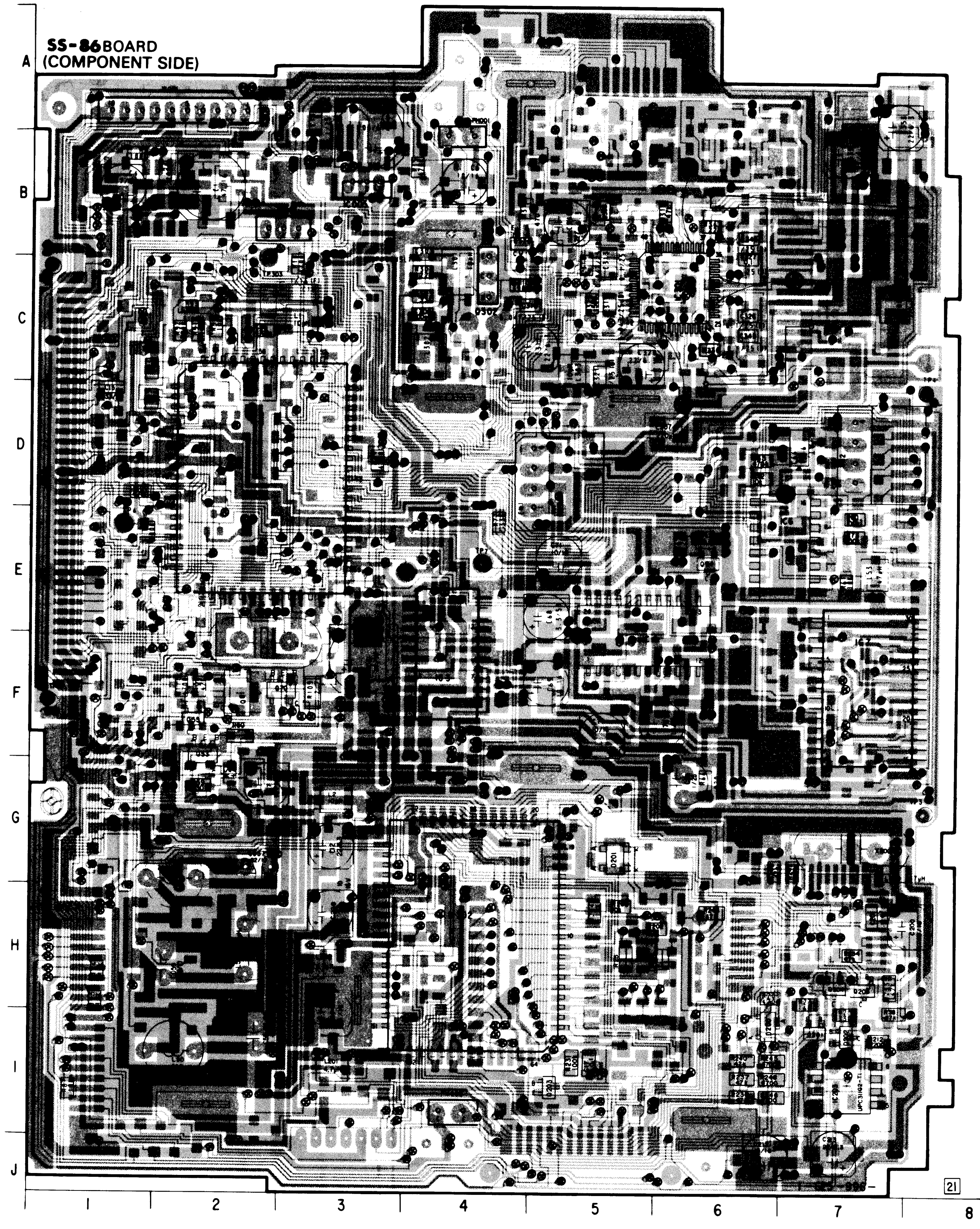


CN001	D-5
CN002	D-7
CN003	C-10
CN004	A-11
CN005	J-13
CN006	B-14
CN007	I-16
CT200	G-12
D003	E-15
D004	E-15
D050	I-15
D051	H-15
D200	I-6
D201	G-5
D203	G-11

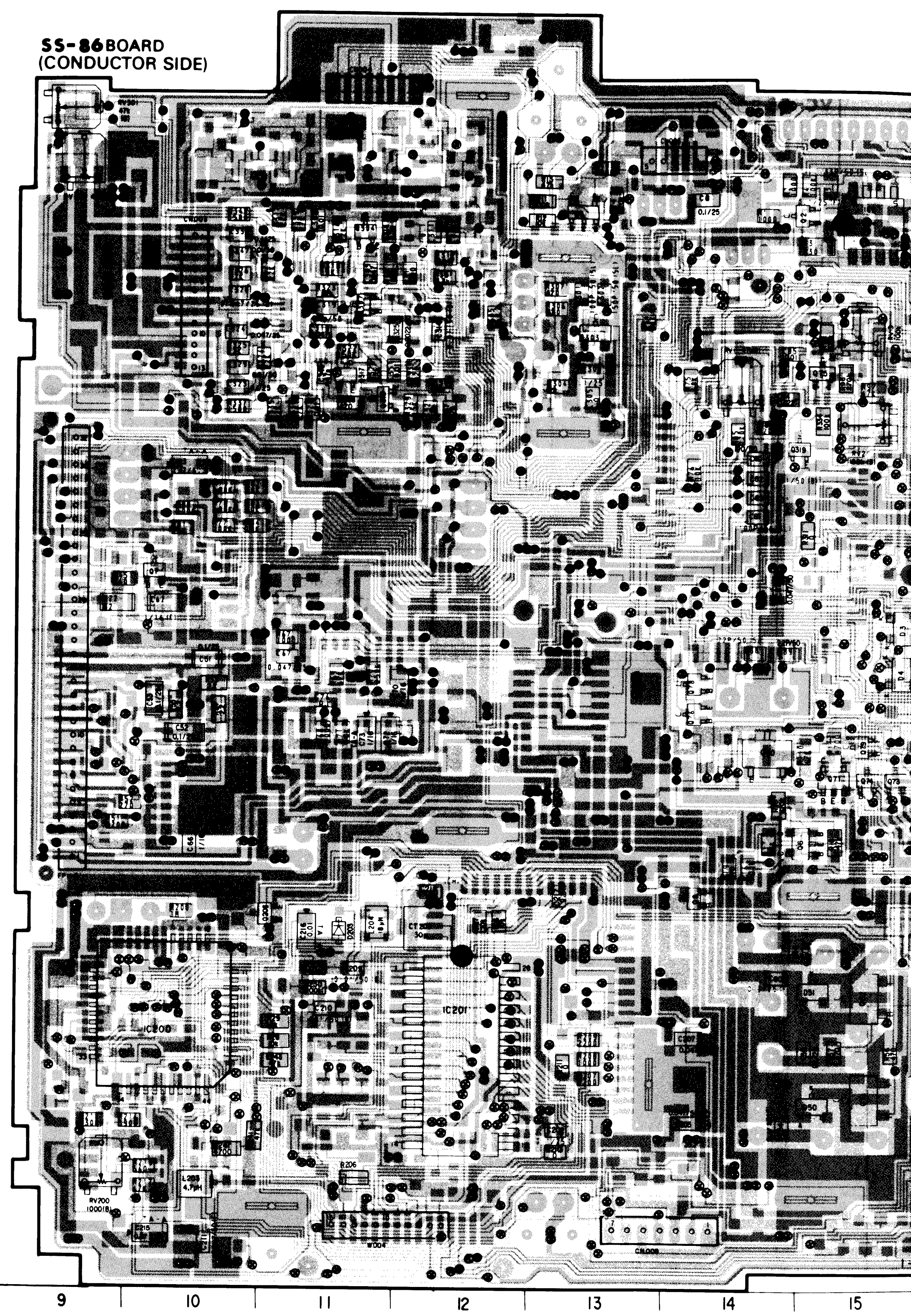
IC001	D-2
IC002	B-15
IC003	F-4
IC004	F-5
IC005	B-3
IC006	E-7
IC007	F-7
IC200	H-10
IC201	H-12
IC202	H-4
IC203	I-7
IC301	C-6

Q001	B-2
Q002	B-15
Q005	B-13
Q006	G-15
Q007	E-10
Q008	G-14
Q051	I-15
Q052	H-15
Q053	F-2
Q054	E-6
Q055	F-2
Q070	F-2
Q071	F-15
Q073	F-15
Q074	F-15
Q075	C-15
Q076	F-14
Q078	F-14
Q079	F-15
Q080	F-14
Q081	F-2
Q201	I-7
Q202	I-7
Q203	I-5
Q204	H-7
Q205	H-7
Q206	G-11
Q302	C-4
Q303	C-13
Q304	B-11
Q305	B-5
Q307	C-11
Q317	C-11
Q318	C-11
Q319	D-15
Q320	B-4
RV001	C-14
RV002	D-15
RV003	C-15
RV200	I-9
RV301	A-9
RV302	B-9
TP001	C-1
TP002	F-1
TP003	G-8
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-2

SS-86 BOARD (COMPONENT SIDE)



SS-86 BOARD (CONDUCTOR SIDE)



Note:

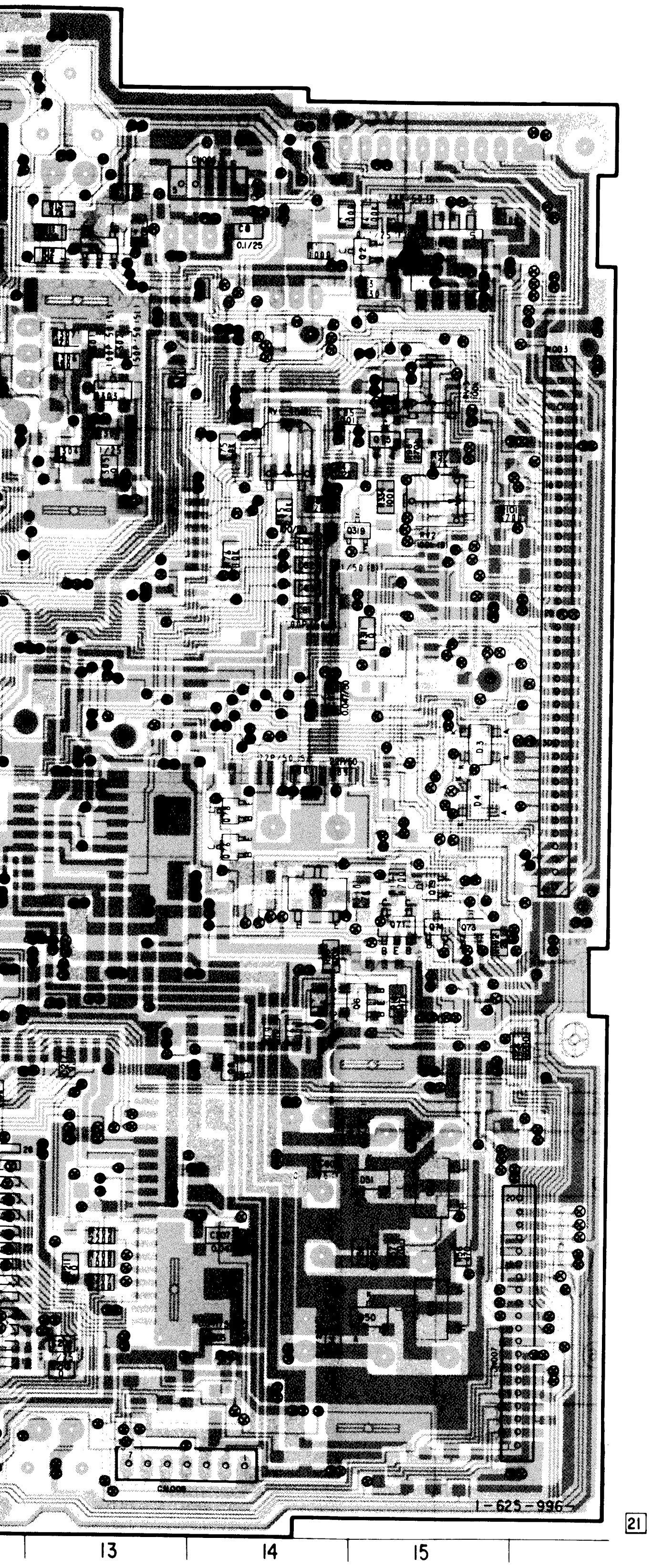
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

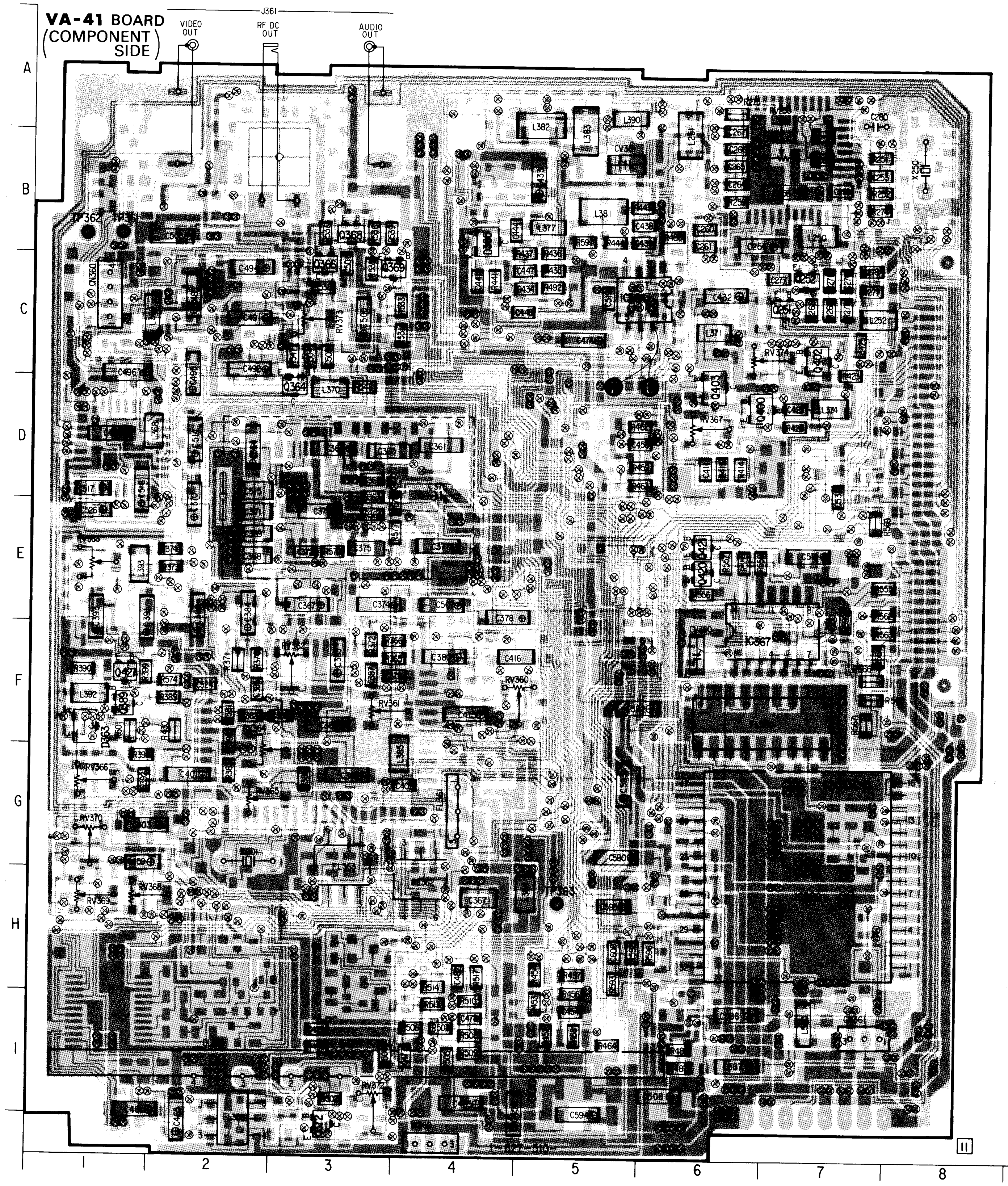
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (SS-86: Q304, Q305, Q307, Q319, VA-41: Q254, Q378, Q382, Q395, Q396, Q397, Q398, Q405, Q407, Q413, Q416, Q417, Q418, Q420, Q424) is transistor with resistor.
  Refer to the SS-86, VA-41 boards schematic diagram for digital transistor.

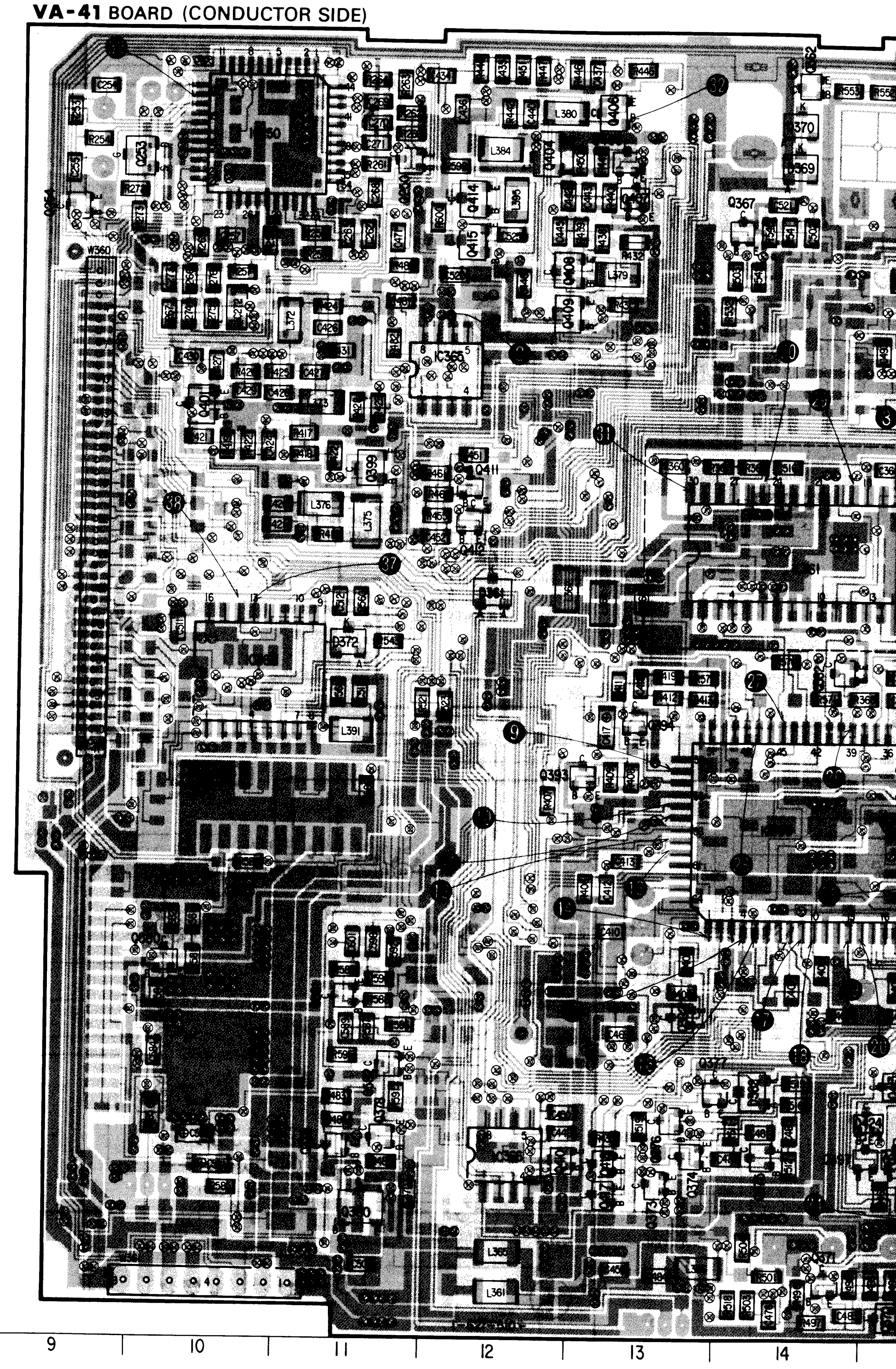
FOR T
SEE PA


13
14
15
1-625-996
21

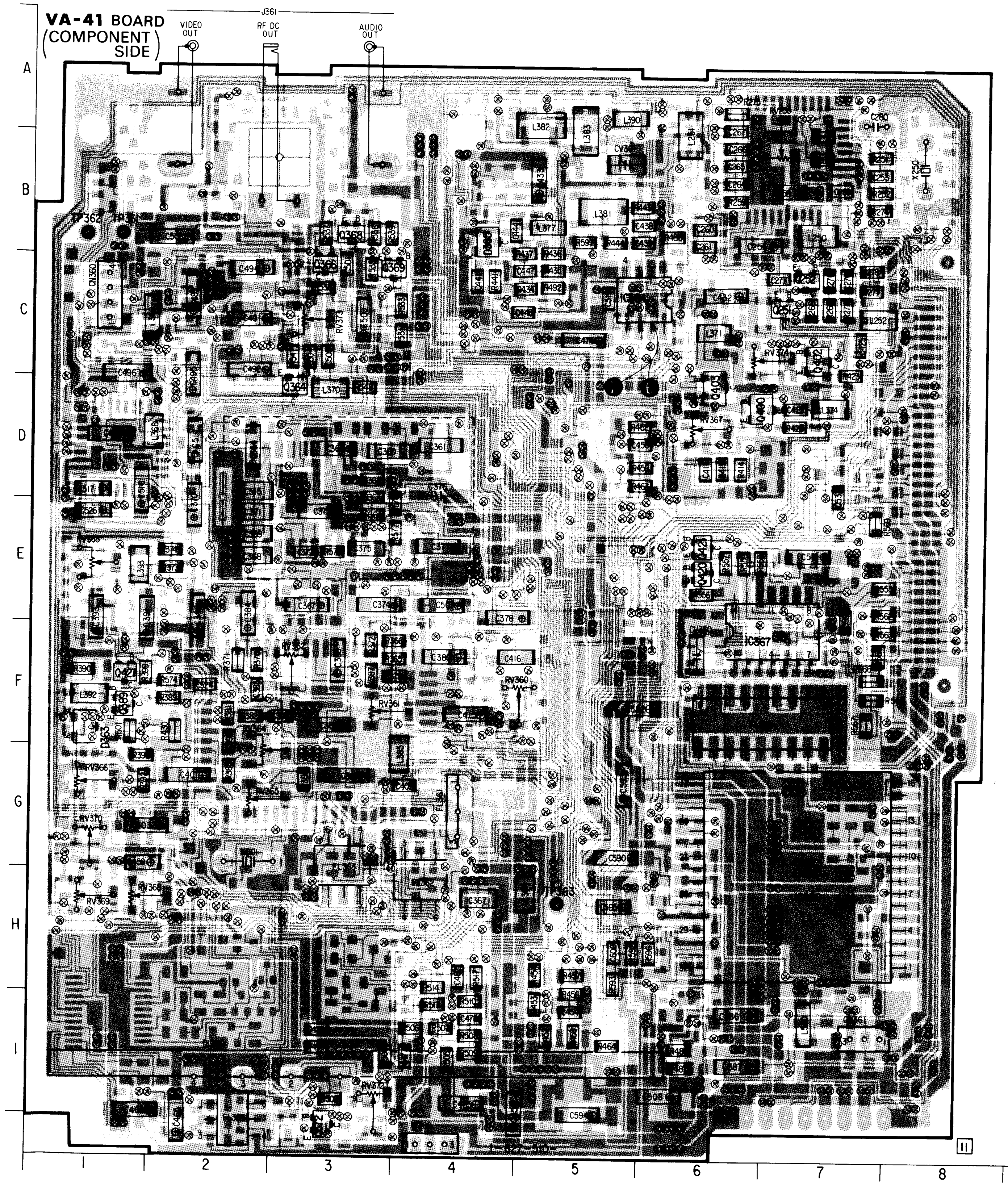
VA-41 BOARD
(COMPONENT SIDE)

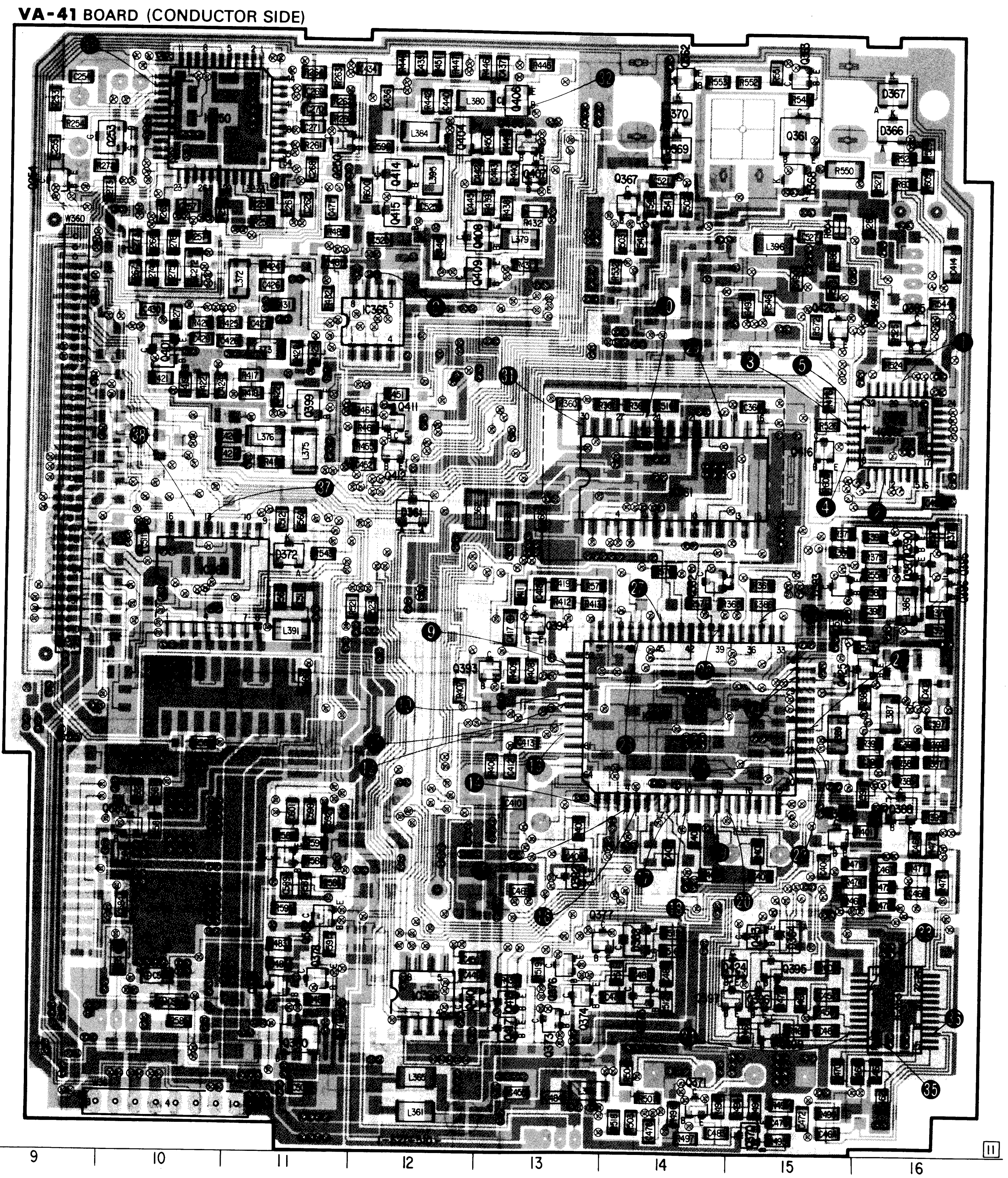

J361
VIDEO OUT
RF DC OUT
AUDIO OUT
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
11

VA-41 BOARD (CONDUCTOR SIDE)


9
10
11
12
13
14

FOR TABLE OF WAVEFORMS, SEE PAGE 89.


VA-41 BOARD
(COMPONENT SIDE)
J361
VIDEO OUT
RF DC OUT
AUDIO OUT
TP362
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
21
11


VA-41 BOARD (CONDUCTOR SIDE)
9
10
11
12
13
14
15
16
11
35

IC250	A·10
IC360	F·14
IC361	D·14
IC362	D·16
IC363	H·16
IC364	B·5
IC365	C·12
IC366	H·12
IC367	E·7
IC368	E·10
IC580	G·7

Q250	A·11
Q251	B·7
Q252	B·7
Q253	A·10
Q254	B·9
Q361	A·15
Q362	A·14
Q363	A·15
Q364	C·3
Q365	C·16
Q366	B·3
Q367	B·14
Q368	B·3
Q369	B·3
Q370	I·15
Q371	I·14
Q372	I·3
Q373	H·13
Q374	H·13
Q375	H·14
Q376	H·13
Q377	H·14
Q378	H·11
Q379	H·11
Q380	I·11
Q382	E·14
Q383	E·15
Q385	E·16
Q386	E·16
Q387	E·16
Q388	G·16
Q389	F·1
Q390	E·16
Q391	G·15
Q392	G·13
Q393	F·13
Q394	E·13
Q395	H·15
Q396	H·15
Q397	H·15
Q398	H·15
Q399	D·11
Q400	C·6
Q401	C·10
Q402	C·7
Q403	C·6
Q404	A·12
Q405	A·13
Q406	A·13
Q407	B·13
Q408	B·12
Q409	B·12
Q410	H·12
Q411	D·12
Q412	D·12
Q413	H·15
Q414	B·12
Q415	B·12
Q416	D·15
Q417	H·13
Q418	H·13
Q420	E·6
Q421	D·6
Q424	H·15
Q425	F·16
Q426	C·15
Q427	E·1
Q580	G·10
Q581	G·11
Q582	H·11

RV250	A·7
RV360	F·5
RV361	F·3
RV362	E·3
RV363	E·1
RV364	F·2
RV365	G·2
RV366	F·1
RV367	C·6
RV368	G·1
RV369	G·1
RV370	G·1
RV372	I·3
RV374	C·6

TP361	B·1
TP362	B·1
TP363	G·5

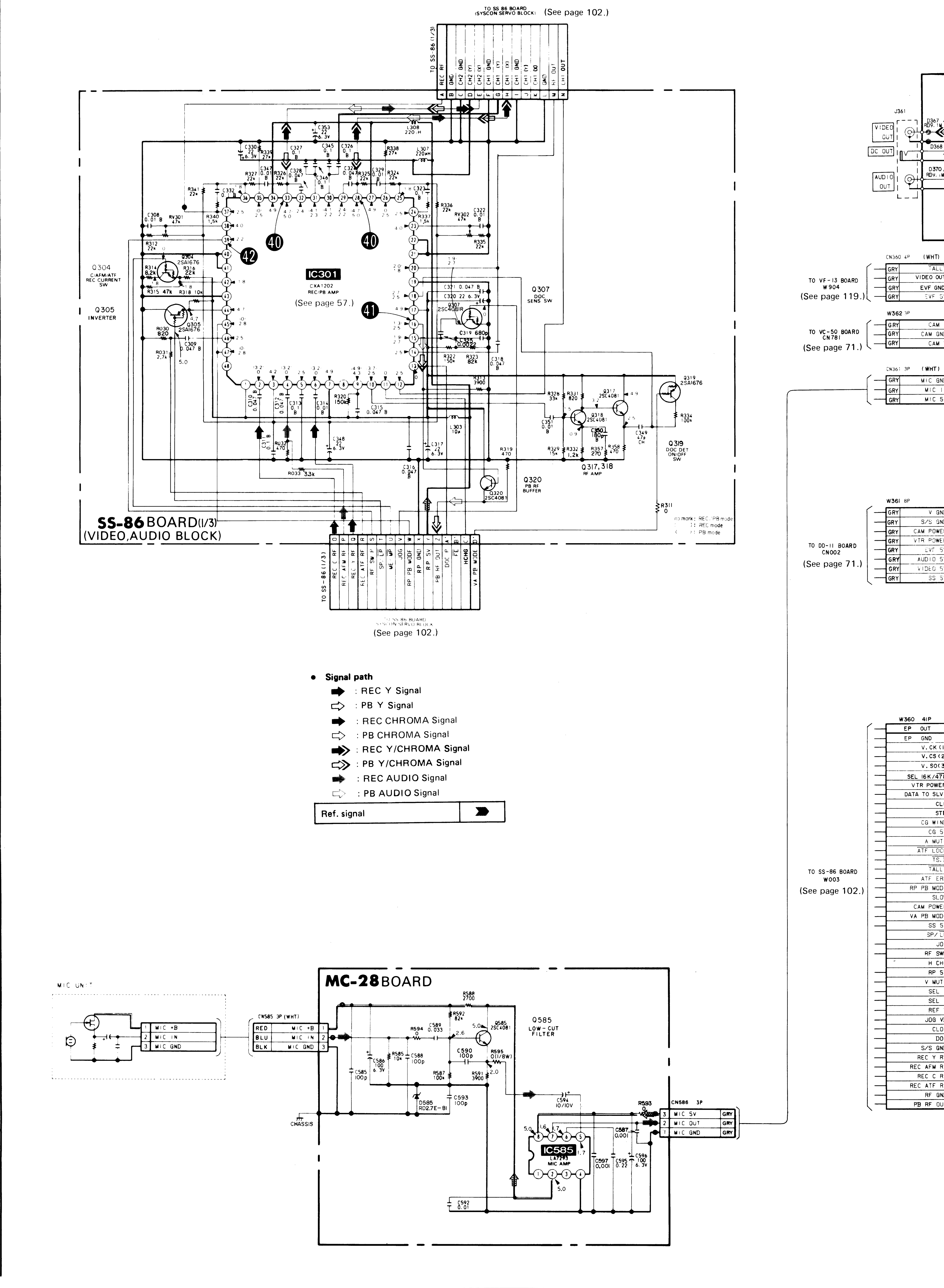
D361	D·12
D362	H·14
D363	F·1
D364	H·15
D365	B·4
D366	A·16
D367	A·16
D368	B·15
D369	A·14
D370	A·14
D372	E·11

CN360	B·1
CN361	H·7

CV360	E·6
CV361	A·5

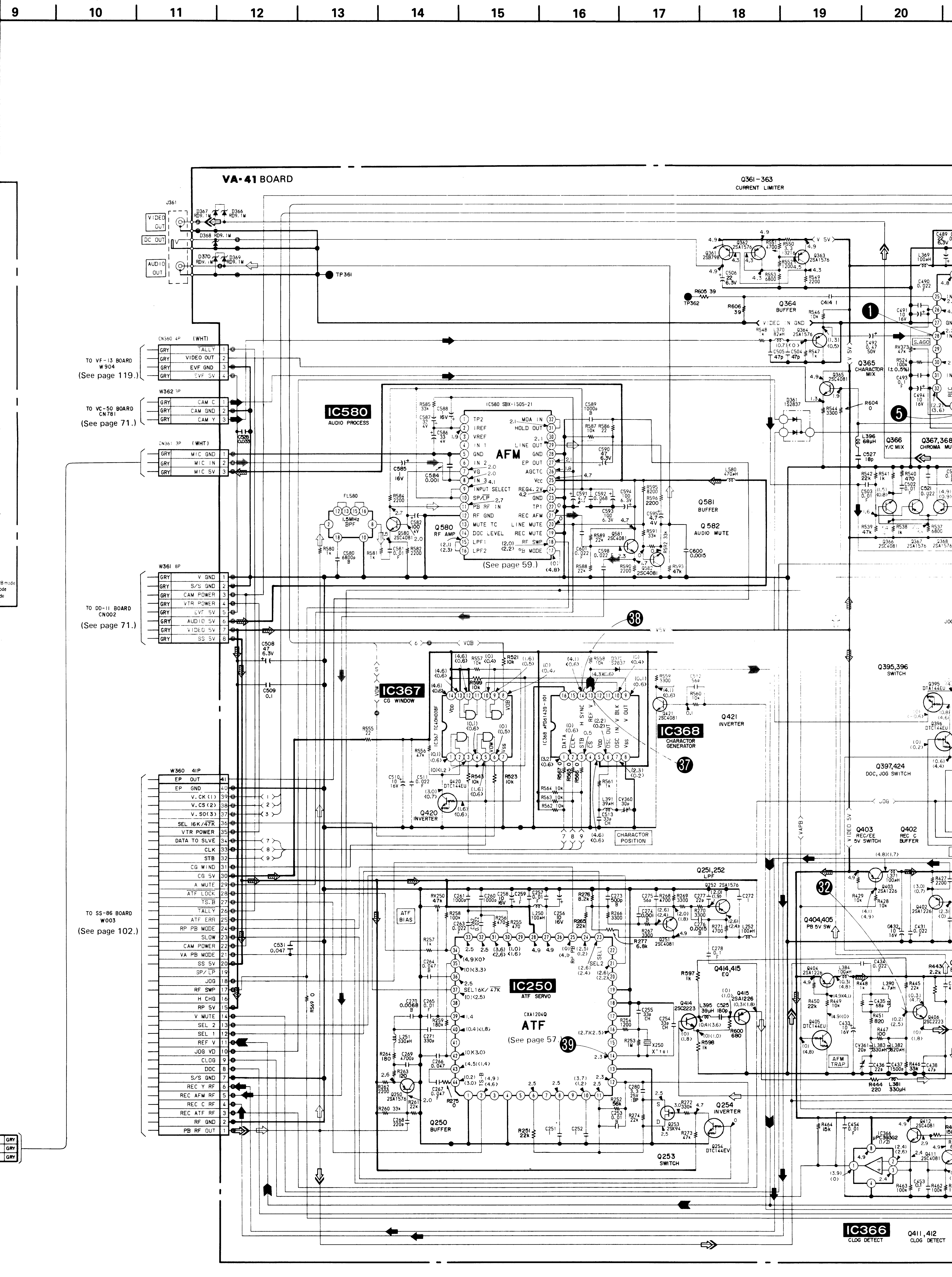
SS-86 (REC/PB AMP), VA-41 (VIDEO/AUDIO SIGNAL PROCESS), MC-28 (MIC AMP) SCHEMATIC DIAGRAM

– Ref. No. SS-86, VA-41 BOARDS: 4,000 sereis –


TO SS 86 BOARD (SYSCON SERVO BLOCK) (See page 102.)
TO SS-86 (1/3)
REC RF
GND
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
CH1 GND
CH1 (Y)
CH1 (X)
GND
RF OUT
CH1 OUT
IC301
CXA1202
REC/PB AMP
(See page 57.)
40
41
42
Q304
C/AFM/ATF
REC CURRENT SW
Q305
INVERTER
Q307
DOC SENS SW
Q317, 318
RF AMP
Q319
DOC DET ON/OFF SW
Q320
PB RF BUFFER
SS-86 BOARD(1/3)
(VIDEO, AUDIO BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
REC C RF
REC AFM RF
REC Y RF
REC ATF RF
RF SW P
SP/LP
WE UP
JOG
RP PB MODE
RP GND
RP 5V
PB HF OUT
DOC P
FE
HCHG
VA PB MODE
TO SS 86 BOARD (SYSCON SERVO BLOCK)
(See page 102.)
J361
VIDEO OUT
DC OUT
AUDIO OUT
TO VF-13 BOARD W904
(See page 119.)
CN360 4P (WHT)
TALLY
VIDEO OUT
EVF GND
EVF 5V
TO VC-50 BOARD CN781
(See page 71.)
W362 3P
CAM
CAM GND
CAM
CN361 3P (WHT)
MIC GND
MIC I
MIC 5
TO DD-11 BOARD CN002
(See page 71.)
W361 8P
V GND
S/S GND
CAM POWER
VTR POWER
EVF 5V
AUDIO 5V
VIDEO 5V
SS 5V
TO SS-86 BOARD W003
(See page 102.)
W360 41P
EP OUT
EP GND
V. CK
V. CS
V. SO
SEL 16K/47K
VTR POWER
DATA TO SLV
CLK
STB
CG WIND
CG 5
A MUTE
ATF LOCK
TS.
TALLY
ATF ERR
RP PB MODE
SLOT
CAM POWER
VA PB MODE
SS 5
SP/LP
JOG
RF SW
H CH
RP 5
V MUTE
SEL
SEL
REF
JOG V
CLO
DO
S/S GND
REC Y RF
REC AFM RF
REC C RF
REC ATF RF
RF GND
PB RF OUT
MIC UNIT
MIC +B
MIC IN
MIC GND
CN585 3P (WHT)
RED
BLU
BLK
MC-28 BOARD
Q585
LOW-CUT FILTER
IC585
LA7293
MIC AMP
D585
RD2.7E-B1
CHASSIS
CN586 3P
MIC 5V
MIC OUT
MIC GND
GRY
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P

- **Signal path**
  - ➡ : REC Y Signal
  - ⇨ : PB Y Signal
  - ➡ : REC CHROMA Signal
  - ⇨ : PB CHROMA Signal
  - ➡ : REC Y/CHROMA Signal
  - ⇨ : PB Y/CHROMA Signal
  - ➡ : REC AUDIO Signal
  - ⇨ : PB AUDIO Signal

Ref. signal	➡


9
10
11
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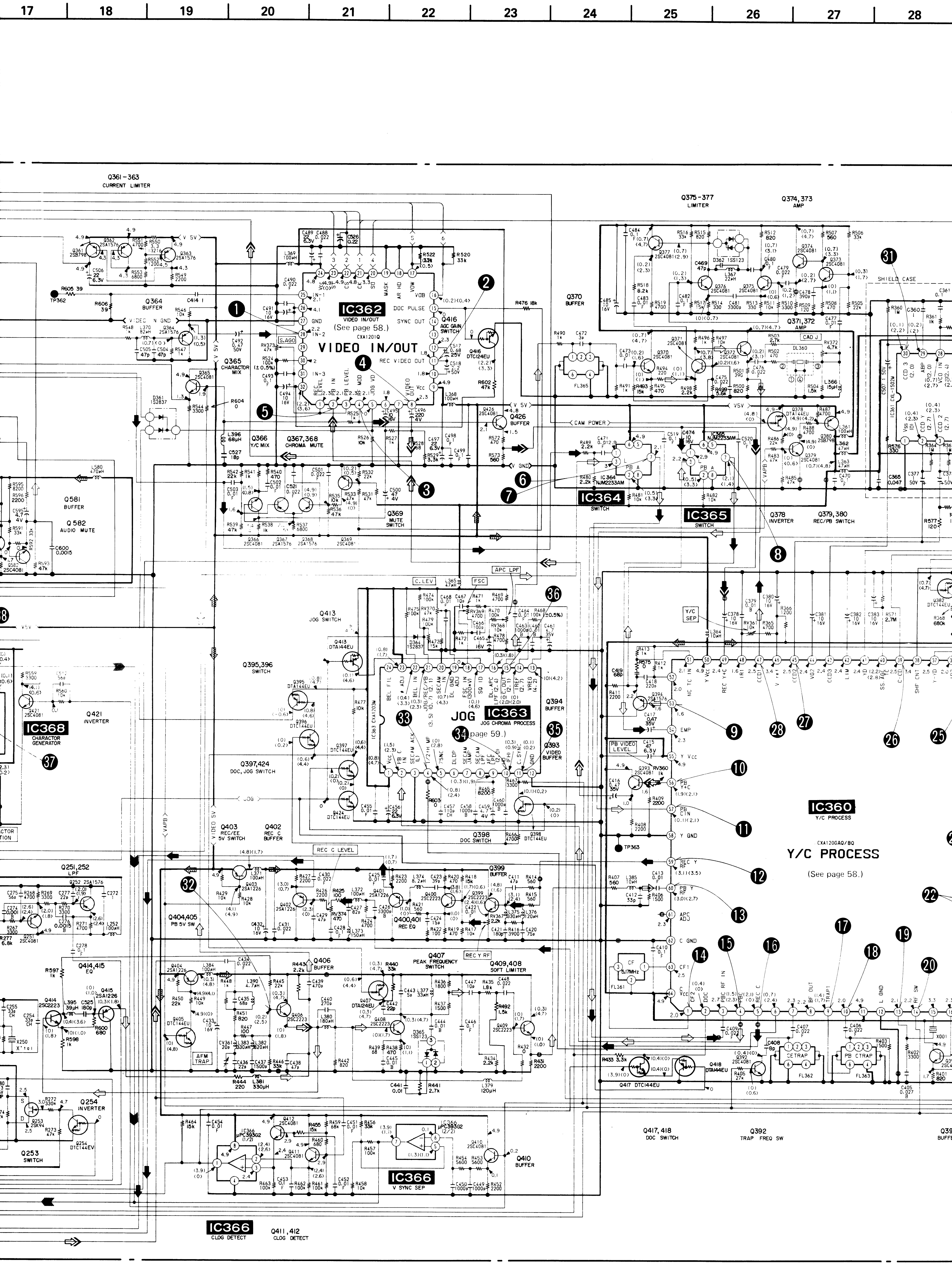
19
20
VA-41 BOARD
Q361-363
CURRENT LIMITER
J361
VIDEO OUT
DC OUT
AUDIO OUT
TP361
TP362
Q364
BUFFER
Q365
CHARACTOR MIX
Q366
Y/C MIX
Q367,368
CHROMA MU
CN360 4P (WHT)
TALLY
VIDEO OUT
EVF GND
EVF 5V
TO VF-13 BOARD
W904
(See page 119.)
W362 3P
CAM C
CAM GND
CAM Y
TO VC-50 BOARD
CN781
(See page 71.)
CN361 3P (WHT)
MIC GND
MIC IN
MIC 5V
IC580
AUDIO PROCESS
IC580 SBX-1505-21
AFM
(See page 59.)
FL580
1.5MHz BPF
Q580
RF AMP
Q581
BUFFER
Q582
AUDIO MUTE
W361 8P
V GND
S/S GND
CAM POWER
VTR POWER
EVF 5V
AUDIO 5V
VIDEO 5V
SS 5V
TO DD-11 BOARD
CN002
(See page 71.)
IC367
CG WINDOW
IC367 TC40H008F
Q420
INVERTER
IC368 μPD6142G-101
IC368
CHARACTOR GENERATOR
Q421
INVERTER
CHARACTOR POSITION
Q395,396
SWITCH
Q397,424
DOC, JOG SWITCH
Q403
REC/EE 5V SWITCH
Q402
REC C BUFFER
W360 41P
EP OUT
EP GND
V.CK(1)
V.CS(2)
V.SO(3)
SEL 16K/47K
VTR POWER
DATA TO SLVE
CLK
STB
CG WIND
CG 5V
A MUTE
ATF LOCK
TS.B
TALLY
ATF ERR
RP PB MODE
SLOW
CAM POWER
VA PB MODE
SS 5V
SP/LP
JOG
RF SWP
H CHG
RP 5V
V MUTE
SEL 2
SEL 1
REF V
JOG VD
CLOG
DOC
S/S GND
REC Y RF
REC AFM RF
REC C RF
REC ATF RF
RF GND
PB RF OUT
TO SS-86 BOARD
W003
(See page 102.)
ATF BIAS
IC250
ATF SERVO
CXA1204Q
ATF
(See page 57.)
Q250
BUFFER
Q251,252
LPF
Q414,415
EQ
Q254
INVERTER
Q253
SWITCH
Q404,405
PB 5V SW
AFM TRAP
IC366
CLOG DETECT
Q411,412
CLOG DETECT
❶
❺
㊳
㊲
㊴
㉜

AUDIO


17
18
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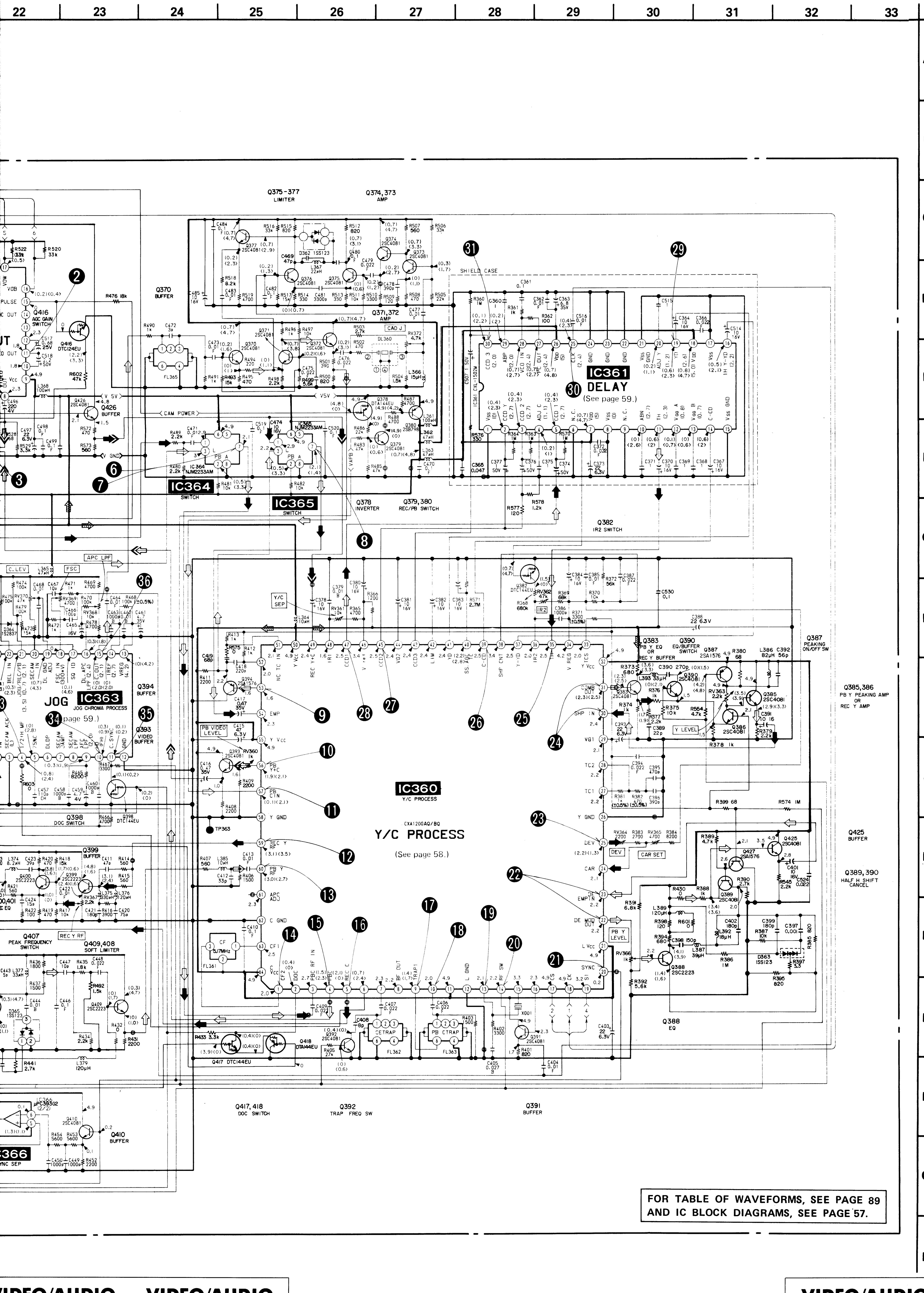
25
26
27
28
Q361-363
CURRENT LIMITER
Q375-377
LIMITER
Q374,373
AMP
SHIELD CASE
IC362
VIDEO IN/OUT
(See page 58.)
CXA1201Q
VIDEO IN/OUT
Q416
AGC GAIN SWITCH
Q364
BUFFER
Q365
CHARACTOR MIX
Q366
Y/C MIX
Q367,368
CHROMA MUTE
Q369
MUTE SWITCH
Q426
BUFFER
Q370
BUFFER
Q371,372
AMP
IC364
SWITCH
IC365
SWITCH
Q378
INVERTER
Q379,380
REC/PB SWITCH
Q581
BUFFER
Q582
AUDIO MUTE
Q413
JOG SWITCH
Q395,396
SWITCH
Q397,424
DOC, JOG SWITCH
IC363
JOG
JOG CHROMA PROCESS
(See page 59.)
Q394
BUFFER
Q393
VIDEO BUFFER
Q398
DOC SWITCH
Q421
INVERTER
IC368
CHARACTOR GENERATOR
IC360
Y/C PROCESS
CXA1200AQ/BQ
Y/C PROCESS
(See page 58.)
Q403
REC/EE 5V SWITCH
Q402
REC C BUFFER
Q251,252
LPF
Q404,405
PB 5V SW
Q399
BUFFER
Q400,401
REC EQ
Q414,415
EQ
Q406
BUFFER
Q407
PEAK FREQUENCY SWITCH
Q409,408
SOFT LIMITER
Q254
INVERTER
Q253
SWITCH
AFM TRAP
Q417 DTC144EU
Q418
Q392
Q417,418
DOC SWITCH
Q392
TRAP FREQ SW
IC366
V SYNC SEP
Q410
BUFFER
IC366
CLOG DETECT
Q411,412
CLOG DETECT
FL361
FL362
FL363
FL365
CETRAP
PB CTRAP
CF 5.17MHz
TP362
TP363
CAM POWER
V 5V
V GND
C.LEV
FSC
APC LPF
Y/C SEP
REC C LEVEL
REC Y RF
PB VIDEO LEVEL
CAD J
DL360

VIDEO/AUDIO VIDEO/AUDIO


22
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31
32
33
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q375-377
LIMITER
Q374, 373
AMP
Q370
BUFFER
Q371, 372
AMP
CAO J
DL360
FL365
Q416
AGC GAIN SWITCH
Q426
BUFFER
CAM POWER
V 5V
IC364
SWITCH
NJM2233AM
IC365
SWITCH
Q378
INVERTER
Q379, 380
REC/PB SWITCH
SHIELD CASE
IC361
DELAY
(See page 59.)
CXL-1502M
Q382
IR2 SWITCH
APC LPF
C.LEV
FSC
Y/C SEP
JOG
IC363
JOG CHROMA PROCESS
(See page 59.)
Q394
BUFFER
Q393
VIDEO BUFFER
Q398
DOC SWITCH
TP363
PB VIDEO LEVEL
IC360
Y/C PROCESS
CXA1200AQ/BQ
Y/C PROCESS
(See page 58.)
Q383
PB Y EQ OR REC Y BUFFER
Q390
EQ/BUFFER SWITCH
Q387
PEAKING ON/OFF SW
Q385, 386
PB Y PEAKING AMP OR REC Y AMP
Y LEVEL
DEV
CAR SET
Q425
BUFFER
Q389, 390
HALF H SHIFT CANCEL
PB Y LEVEL
Q388
EQ
Q399
BUFFER
Q400, 401
REC EQ
REC Y RF
Q407
PEAK FREQUENCY SWITCH
Q409, 408
SOFT LIMITER
CF 5.17MHz
FL361
CETRAP
FL362
PB CTRAP
FL363
X001
Q417 DTC144EU
Q418 DTA144EU
Q417, 418
DOC SWITCH
Q392
TRAP FREQ SW
Q391
BUFFER
IC366
SYNC SEP
Q410
BUFFER

FOR TABLE OF WAVEFORMS, SEE PAGE 89
AND IC BLOCK DIAGRAMS, SEE PAGE 57.

4-6. SS-86 (SYSTEM CONTROL, SERVO), SW-76 (START/STOP, STANDBY SWITCH, INPUT/OUTPUT JACK), ZM-7 (ZOOM SWITCH), LA-1 (START/STOP SWITCH), PA-13 (POWER), (

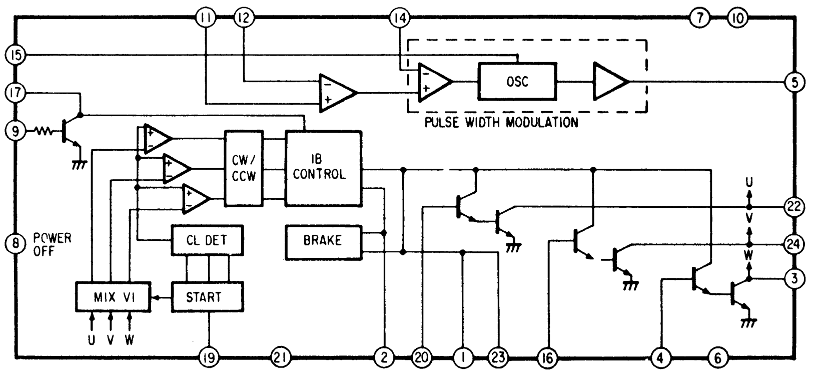
– Ref. No. SS-86, SW-76, LA-1, ZM-7 BOARDS: 5,000 series, PA-13, FP-53, CC-7 BOARDS: 6,000 series –

- **Signal path**
  - ➡ : REC Y Signal
  - ➡ : REC CHROMA Signal
  - ➡➡ : REC Y/CHROMA Signal
  - ⇨⇨ : PB Y/CHROMA Signal
  - ➡ : **REC AUDIO Signal**
  - ⇨ : PB AUDIO Signal

Signal path

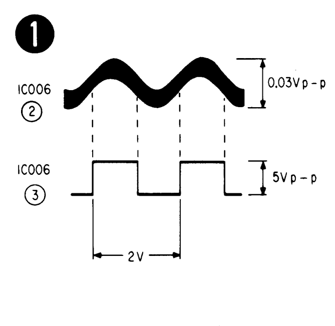
	REC	REC/PB	PB
Drum speed servo		➡	
Drum phase servo		➡➡	
Drum servo (speed and phase)		➡➡➡	
Capstan speed servo		➡	
Capstan phase servo	➡➡		⇨⇨
Capstan servo (speed and phase)		➡➡➡	
Ref. signal	➡	➡	⇨

IC004 CX20114

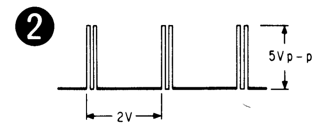


PULSE WIDTH MODULATION
OSC
POWER OFF
CW/CCW
IB CONTROL
CL DET
BRAKE
MIX VI
START
U V W

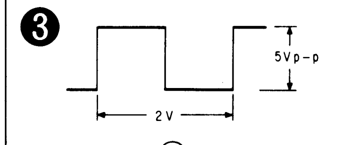
SS-86 BOARD



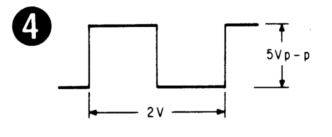
IC006 ②, ③ REC/PB



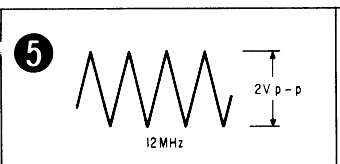
IC006 ⑦ REC/PB



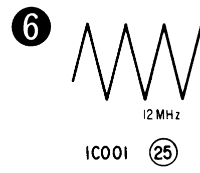
IC006 ⑨ REC/PB



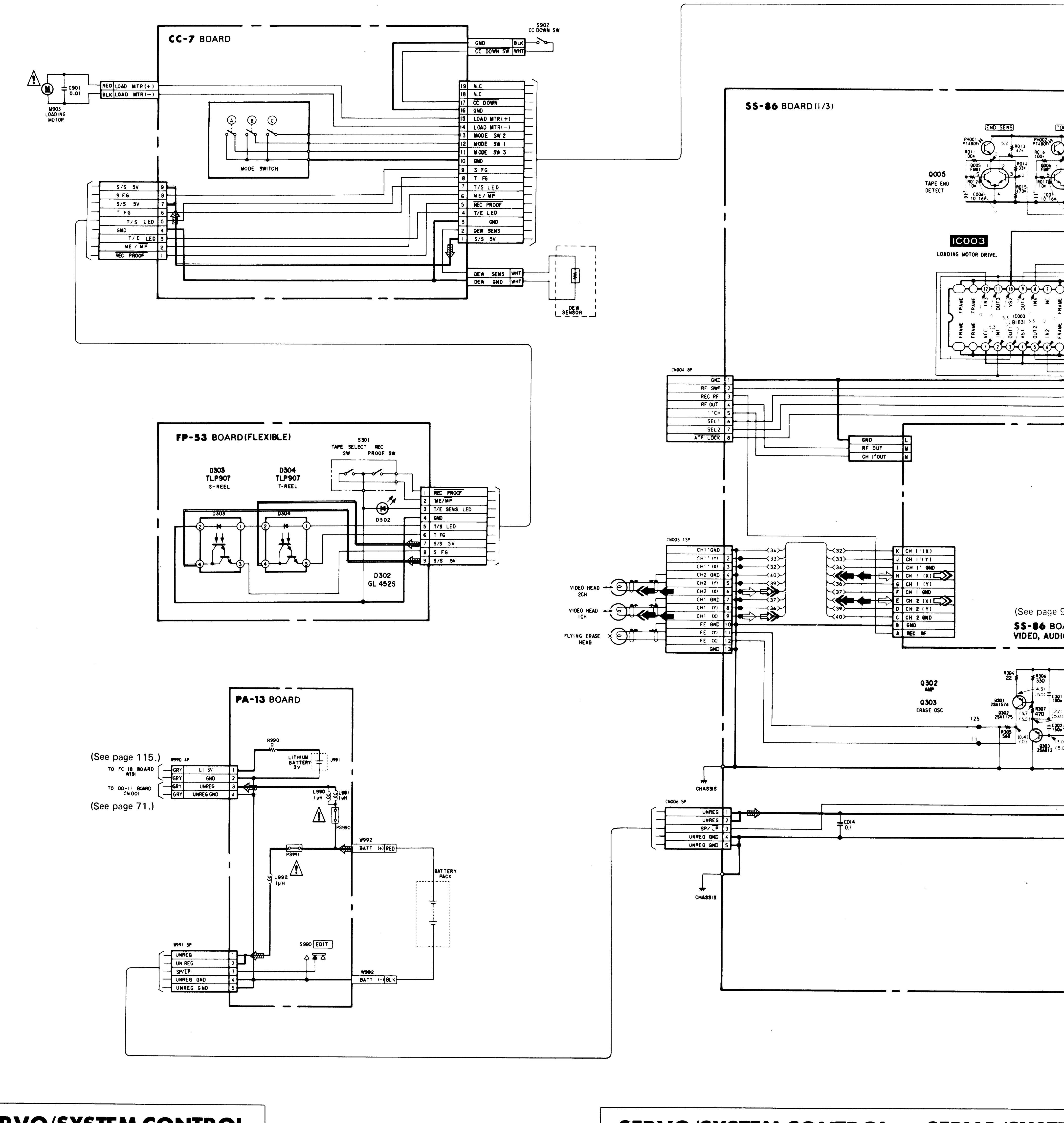
IC001 ⑭ REC/PB



IC001 ㉔ REC/PB

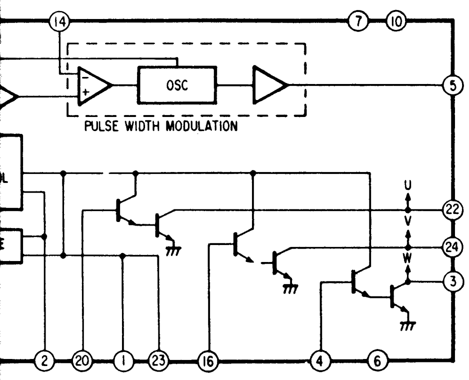


IC001 ㉕

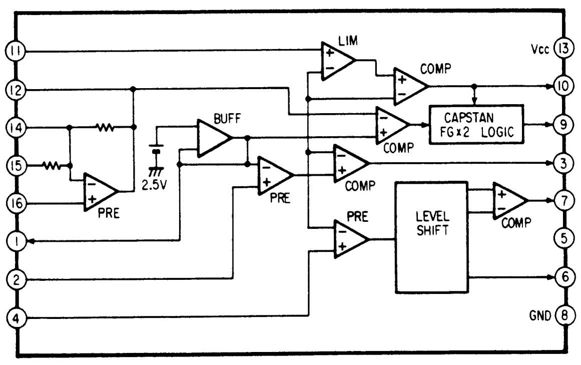


S902 CC DOWN SW
CC-7 BOARD
GND BLK
CC DOWN SW WHT
C901 0.01
M903 LOADING MOTOR
RED LOAD MTR(+)
BLK LOAD MTR(-)
MODE SWITCH
19 N.C
18 N.C
17 CC DOWN
16 GND
15 LOAD MTR(+)
14 LOAD MTR(-)
13 MODE SW 2
12 MODE SW 1
11 MODE SW 3
10 GND
9 S FG
8 T FG
7 T/S LED
6 ME/MP
5 REC PROOF
4 T/E LED
3 GND
2 DEW SENS
1 S/S 5V
S/S 5V
S FG
S/S 5V
T FG
T/S LED
GND
T/E LED
ME/MP
REC PROOF
DEW SENS WHT
DEW GND WHT
DEW SENSOR
SS-86 BOARD (1/3)
END SENS
Q005 TAPE END DETECT
IC003 LOADING MOTOR DRIVE.
IC003 LB1631
CN004 8P
GND
RF SWP
REC RF
RF OUT
1'CH
SEL1
SEL2
ATF LOCK
GND L
RF OUT M
CH 1'OUT N
FP-53 BOARD (FLEXIBLE)
S301 TAPE SELECT SW REC PROOF SW
D303 TLP907 S-REEL
D304 TLP907 T-REEL
1 REC PROOF
2 ME/MP
3 T/E SENS LED
4 GND
5 T/S LED
6 T FG
7 S/S 5V
8 S FG
9 S/S 5V
D302
D302 GL452S
CN003 13P
CH1' GND
CH1' (Y)
CH1' (X)
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
FE GND
FE (Y)
FE (X)
GND
VIDEO HEAD 2CH
VIDEO HEAD 1CH
FLYING ERASE HEAD
K CH 1'(X)
J CH 1'(Y)
I CH 1' GND
H CH 1 (X)
G CH 1 (Y)
F CH 1 GND
E CH 2 (X)
D CH 2 (Y)
C CH 2 GND
B GND
A REC RF
(See page 9
SS-86 BO
VIDEO, AUDI
Q302 AMP
Q303 ERASE OSC
Q302 2SA1175
Q303 2SA812
PA-13 BOARD
(See page 115.)
TO FC-18 BOARD W191
TO DD-11 BOARD CN001
(See page 71.)
W990 4P
GRY LI 3V
GRY GND
GRY UNREG
GRY UNREG GND
R990 0
LITHIUM BATTERY 3V
L990 1μH
L991 1μH
PS990
PS991
L992 1μH
W992 BATT (+) RED
BATTERY PACK
W991 5P
UNREG
UN REG
SP/LP
UNREG GND
UNREG GND
S990 EDIT
W992 BATT (-) BLK
CHASSIS
CN006 5P
UNREG
UNREG
SP/LP
UNREG GND
UNREG GND
C014 0.1
CHASSIS

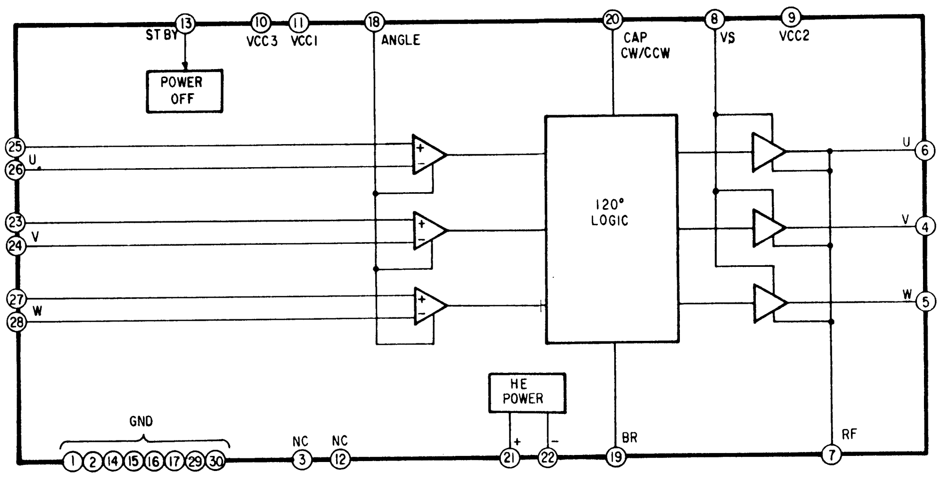
-1 (START/STOP SWITCH), PA-13 (POWER), CC-7 (MODE SWITCH), FP-53 (TAPE SELECT/CASSETTE IN SWITCH) SCHEMATIC DIAGRAM

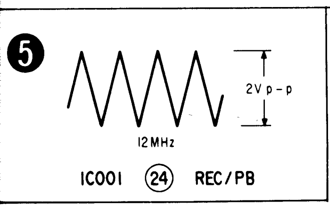

OSC
PULSE WIDTH MODULATION
U
V
W

IC006 CX20115A

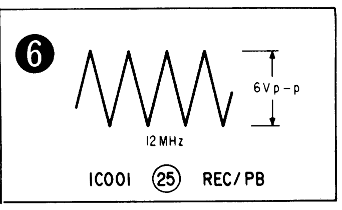

LIM
COMP
BUFF
CAPSTAN FG×2 LOGIC
PRE
2.5V
LEVEL SHIFT
Vcc
GND

IC007 CXA1127M

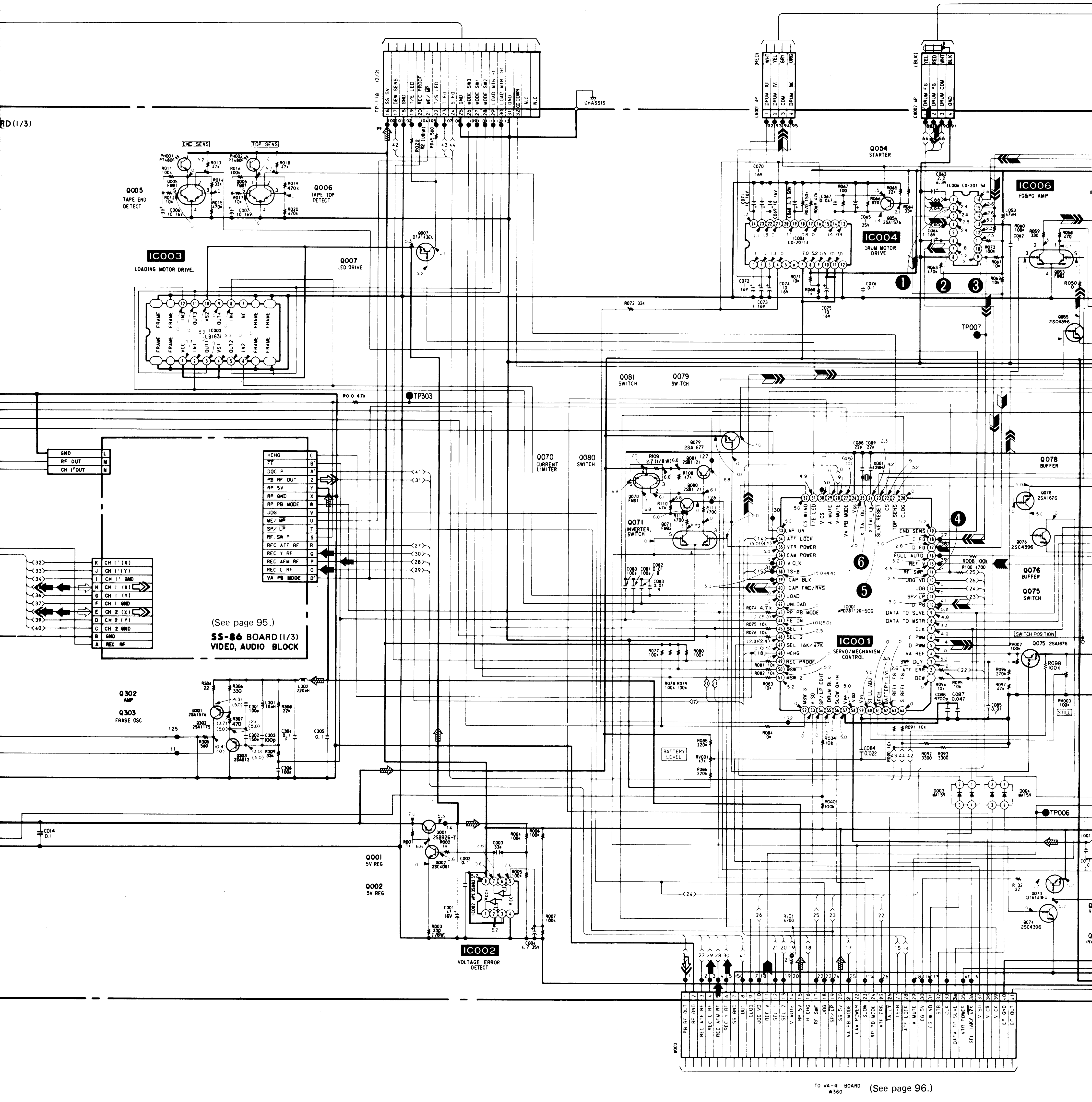

STBY
POWER OFF
VCC3
VCC1
ANGLE
CAP CW/CCW
VS
VCC2
U
V
W
120° LOGIC
HE POWER
GND
NC
BR
RF



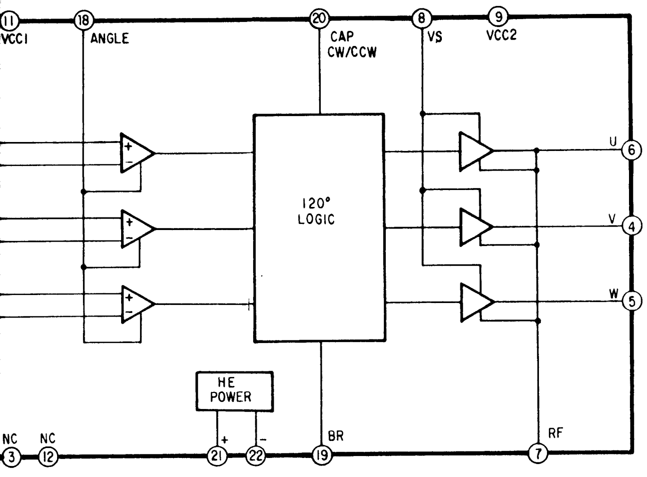
IC001 ㉔ REC/PB



IC001 ㉕ REC/PB


FP-118 (2/2)
CHASSIS
RD (1/3)
END SENS
TOP SENS
Q005 TAPE END DETECT
Q006 TAPE TOP DETECT
Q007 LED DRIVE
IC003 LOADING MOTOR DRIVE.
IC003 LB1631
CN001 4P
CN002 4P
Q054 STARTER
IC004 DRUM MOTOR DRIVE
IC004 CX-20114
IC006 FG&PG AMP
IC006 CX-20115A
TP007
TP303
Q081 SWITCH
Q079 SWITCH
Q070 CURRENT LIMITER
Q080 SWITCH
Q071 INVERTER SWITCH
Q078 BUFFER
Q076 BUFFER
Q075 SWITCH
SWITCH POSITION
STILL
IC001 SERVO/MECHANISM CONTROL
IC001 μPD78112G-509
BATTERY LEVEL
(See page 95.)
SS-86 BOARD (1/3) VIDEO, AUDIO BLOCK
Q302 AMP
Q303 ERASE OSC
Q001 5V REG
Q002 5V REG
IC002 VOLTAGE ERROR DETECT
TP006
Q073 Q074
TO VA-41 BOARD W360
(See page 96.)

ATIC DIAGRAM


VCC1
ANGLE
CAP CW/CCW
VS
VCC2
120° LOGIC
U
V
W
HE POWER
NC
NC
BR
RF

Note on Printed Wiring Board:

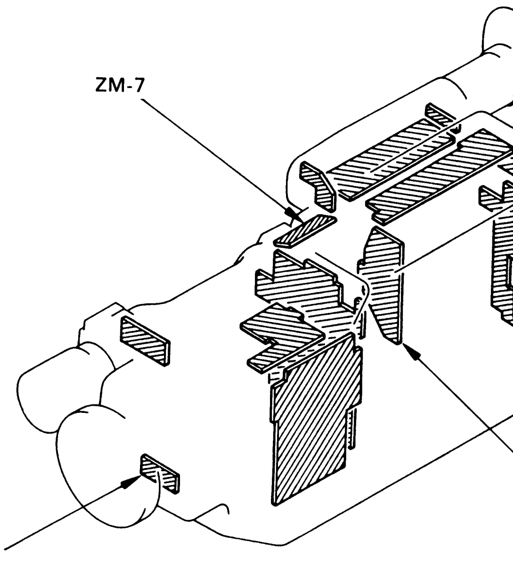
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

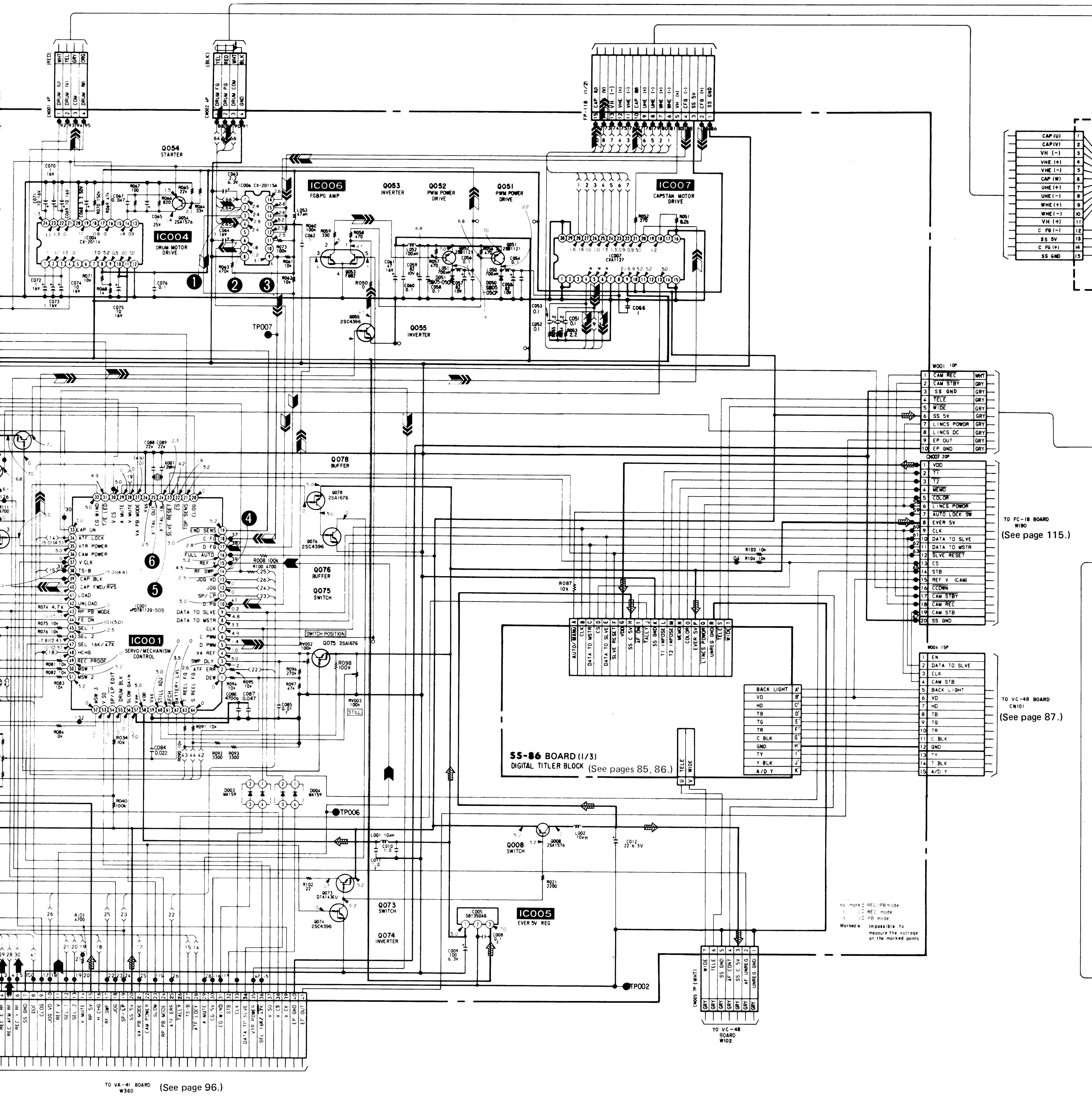
Caution:

Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (SS-86: Q007, Q055, Q071, Q073, Q074, Q075, Q076, Q078, Q079) is transistor with resistor. Refer to the SS-86 board schematic diagram for digital transistor.




IC006 FGBPG AMP
Q053 INVERTER
Q052 PWM POWER DRIVE
Q051 PWM POWER DRIVE
IC007 CAPSTAN MOTOR DRIVE
IC004 DRUM MOTOR DRIVE
Q054 STARTER
Q055 INVERTER
TP007
IC001 SERVO/MECHANISM CONTROL
Q078 BUFFER
Q076 BUFFER
Q075 SWITCH
SWITCH POSITION
STILL
TP006
Q008 SWITCH
Q073 SWITCH
Q074 INVERTER
IC005 EVER 5V REG
TP002
SS-86 BOARD (1/3)
DIGITAL TITLER BLOCK (See pages 85, 86.)
TO FC-18 BOARD W190
(See page 115.)
TO VC-48 BOARD CN101
(See page 87.)
TO VC-48 BOARD W102
TO VA-41 BOARD W360 (See page 96.)
no mark : REC/PB mode
( ) : REC mode
{ } : PB mode
Marked ✱ : Impossible to measure The voltage at the marked points

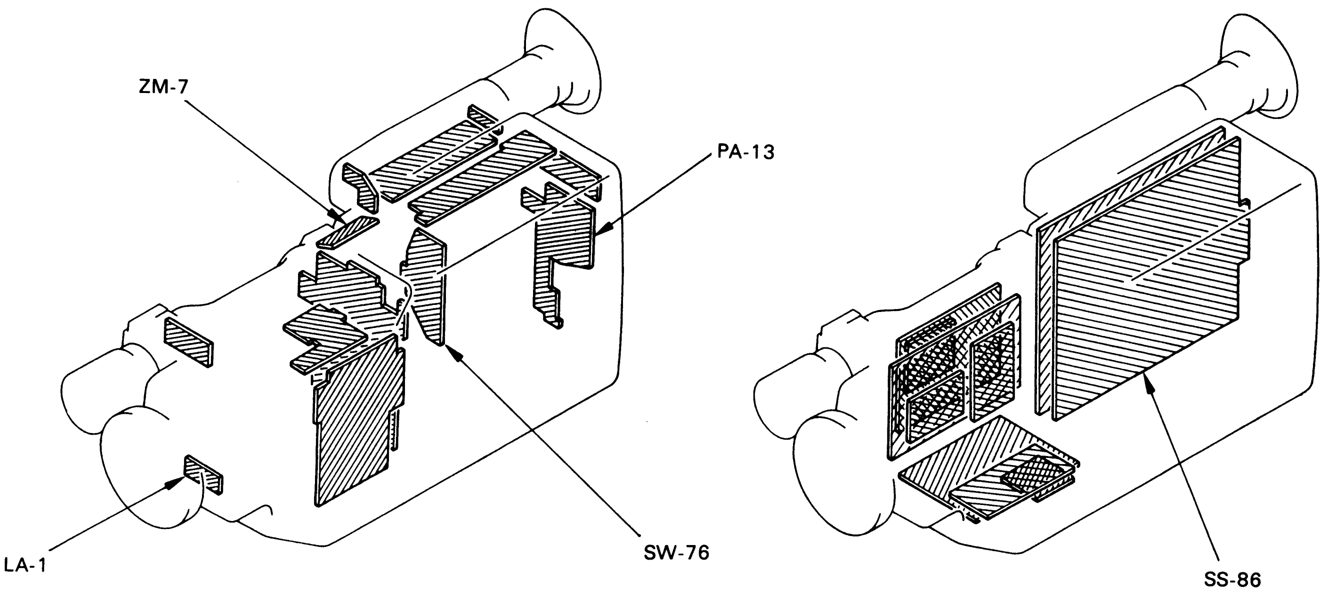
n Printed Wiring Board:
Through hole.
: Pattern of the rear side.

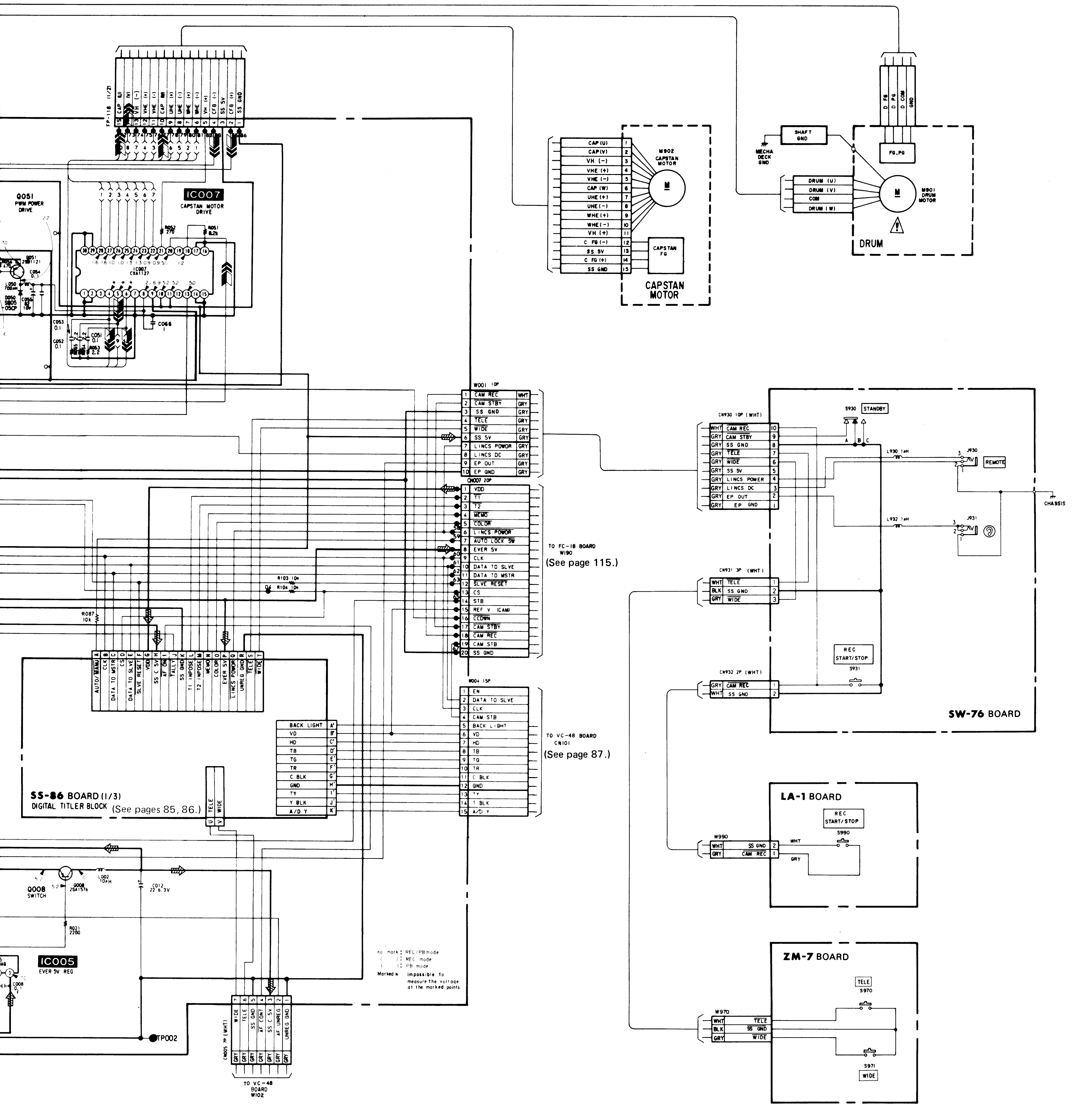
on:

rn face side: ductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
face side: ponent Side)	Parts on the parts face side seen from the parts face are indicated.

tal transistor (SS-86: Q007, Q055, Q071, Q073, 4, Q075, Q076, Q078, Q079) is transistor with tor.

r to the SS-86 board schematic diagram for digital sistor.

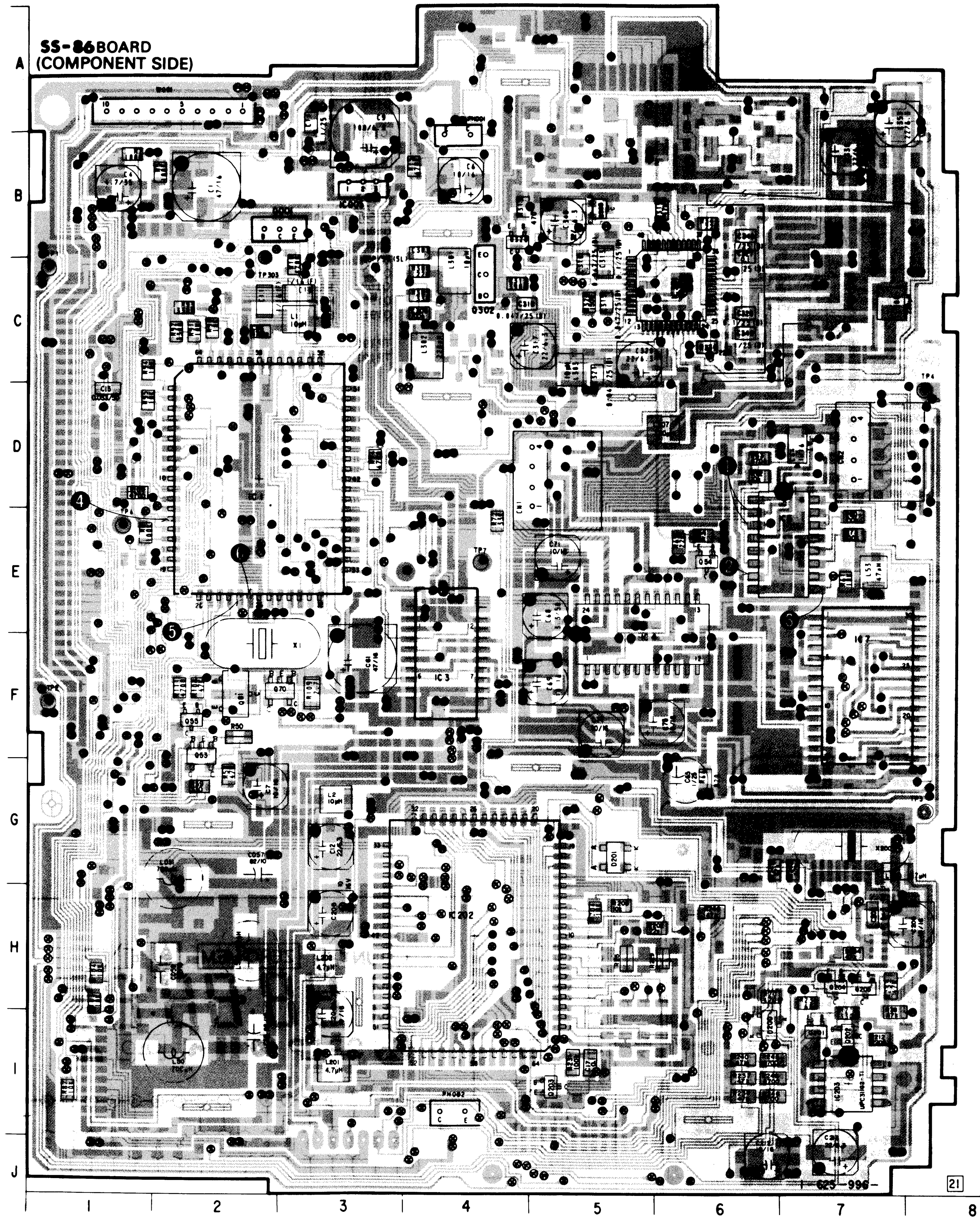

ZM-7
PA-13
LA-1
SW-76
SS-86

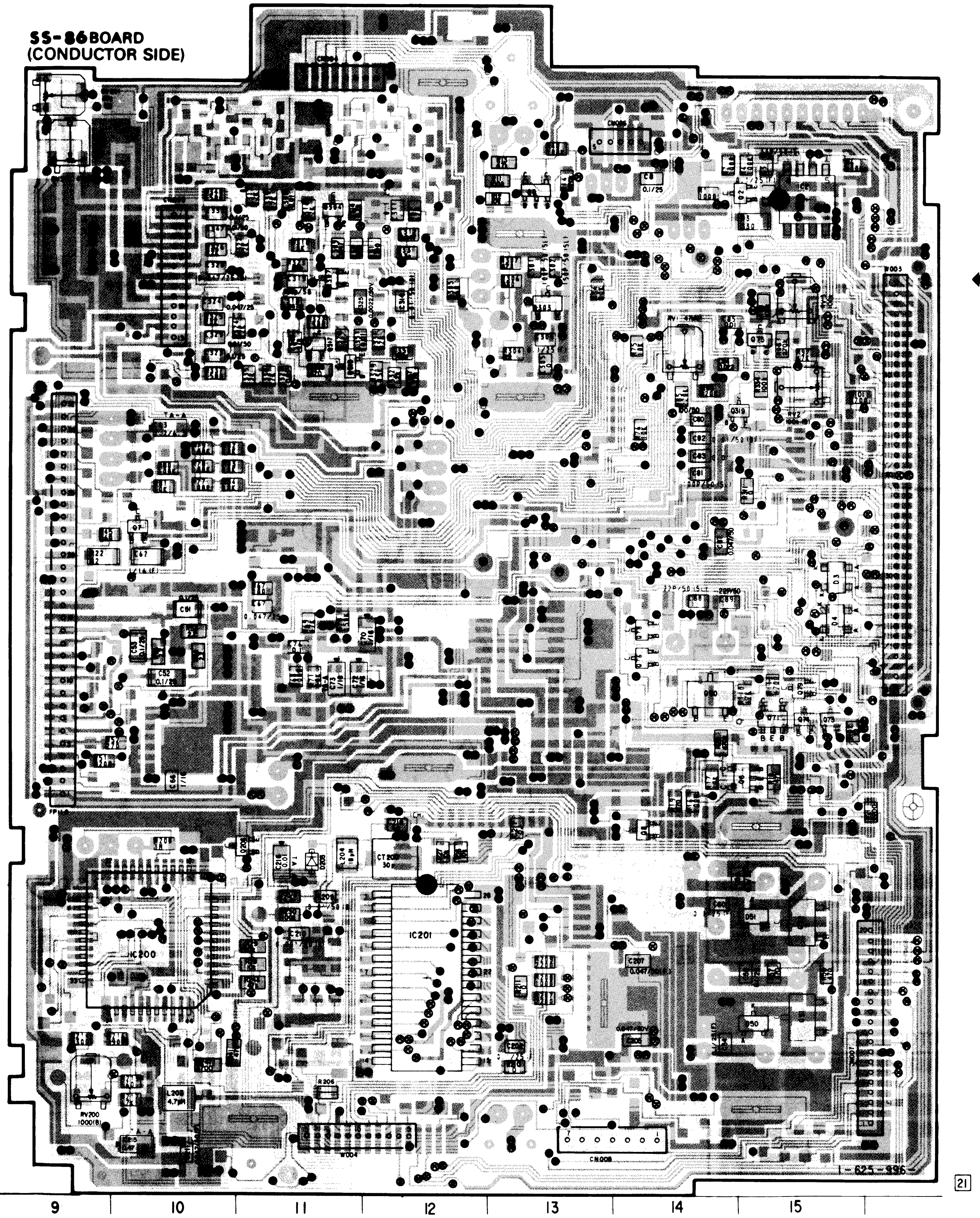

IC007
CAPSTAN MOTOR DRIVE
CXA1127
Q051
PWM POWER DRIVE
SS-86 BOARD (1/3)
DIGITAL TITLER BLOCK (See pages 85, 86.)
IC005
EVER 5V REG
Q008
SWITCH
TP002
W001 10P
CAM REC
CAM STBY
SS GND
TELE
WIDE
SS 5V
LINCS POWOR
LINCS DC
EP OUT
EP GND
CN007 20P
VDD
T1
T2
MEMO
COLOR
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V (CAM)
CCDWN
CAM STB
TO FC-18 BOARD W190
(See page 115.)
W004 15P
EN
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
T BLK
A/D Y
TO VC-48 BOARD CN101
(See page 87.)
CN005 7P (WHT)
TO VC-48 BOARD W102
M902 CAPSTAN MOTOR
CAPSTAN FG
CAPSTAN MOTOR
SHAFT GND
MECHA DECK GND
FG,PG
M901 DRUM MOTOR
DRUM
CN930 10P (WHT)
S930 STANDBY
L930 1μH
J930 REMOTE
CHASSIS
L932 1μH
J931
CN931 3P (WHT)
CN932 2P (WHT)
REC START/STOP
S931
SW-76 BOARD
LA-1 BOARD
S990
W990
ZM-7 BOARD
TELE S970
S971 WIDE
W970

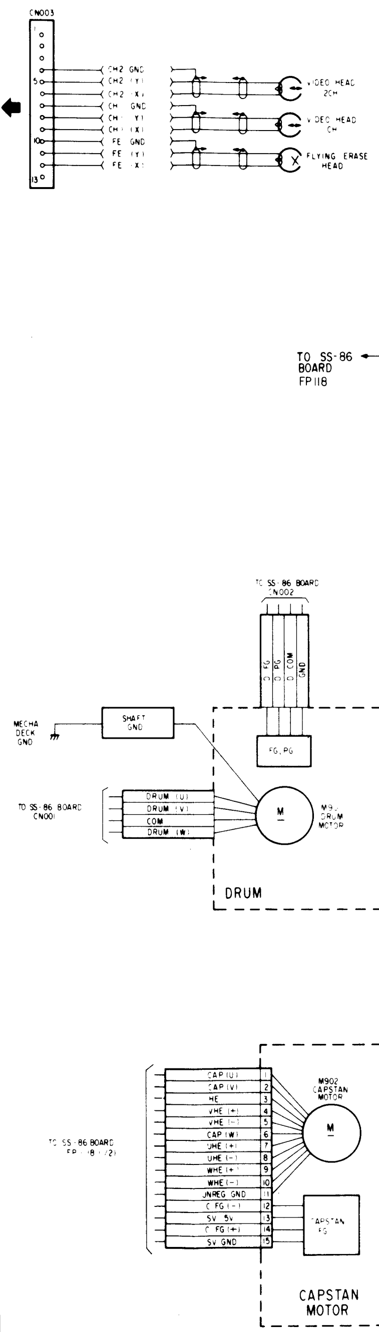
no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
Marked ✱ Impossible to measure the voltage at the marked points

SS-86 (SYSTEM CONTROL, SERVO), SW-76 (START/STOP, STANDBY SWITCH, INPUT/OUTPUT JACK), ZM-7 (ZOOM SWITCH), LA-1 (START/STOP SWITCH), PA-13 (POWER), CC-7 (MODE SWITCH), FP-53 (TAPE SELECT/CASSETTE IN SWITCH) PRINTED W

– Ref. No. SS-86, SW-76, LA-1, ZM-7 BOARDS: 5,000 series, PA-13, FP-53, CC-7 BOARDS: 6,000 series –


SS-86 BOARD
(COMPONENT SIDE)
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
1-625-996-
21

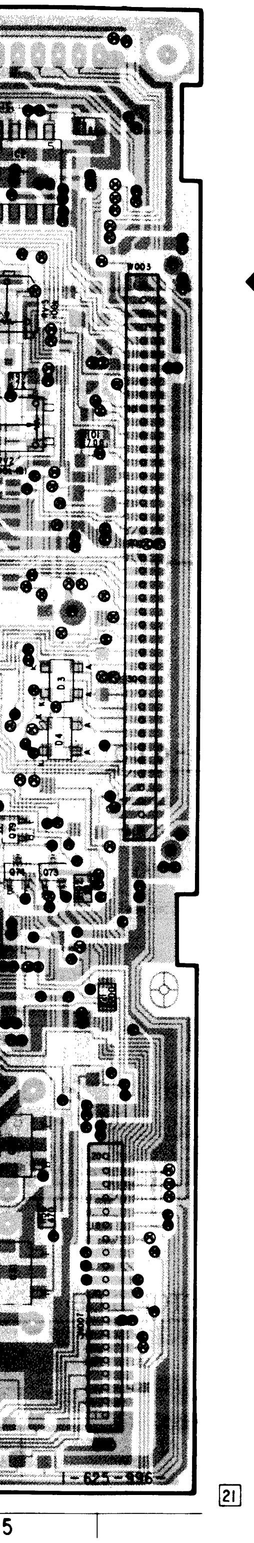

SS-86 BOARD
(CONDUCTOR SIDE)
IC200
IC201
CN006
9
10
11
12
13
14
15
1-625-996-
21


CN003
CH2 GND
CH2 (Y)
CH2 (X)
CH GND
CH (Y)
CH (X)
FE GND
FE (Y)
FE (X)
VIDEO HEAD 2CH
VIDEO HEAD CH
FLYING ERASE HEAD
TO SS-86 BOARD FP118
TO SS-86 BOARD CN002
FG
PG
COM
GND
FG, PG
MECHA DECK GND
SHAFT GND
TO SS-86 BOARD CN001
DRUM (U)
DRUM (V)
COM
DRUM (W)
M
DRUM MOTOR
DRUM
CAP (U)
CAP (V)
HE
VHE (+)
VHE (-)
CAP (W)
UHE (+)
UHE (-)
WHE (+)
WHE (-)
UNREG GND
C FG (-)
SV 5V
C FG (+)
SV GND
TO SS-86 BOARD
M902 CAPSTAN MOTOR
CAPSTAN FG
CAPSTAN MOTOR

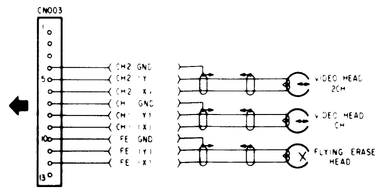
• SS-86 BOARD

CN001	D-5
CN002	D-7
CN003	C-10
CN004	A-11
CN005	J-13
CN006	B-14
CN007	I-16
CT200	G-12
D003	E-15
D004	E-15
D050	I-15
D051	H-15
D200	I-6
D201	G-5
D203	G-11
IC001	D-2
IC002	B-15
IC003	F-4
IC004	F-5
IC005	B-3
IC006	E-7
IC007	F-7
IC200	H-10
IC201	H-12
IC202	H-4
IC203	I-7
IC301	C-6
Q001	B-2
Q002	B-15
Q005	B-13
Q006	G-15
Q007	E-10
Q008	G-14
Q051	I-15
Q052	H-15
Q053	F-2
Q054	E-6
Q055	F-2
Q070	F-2
Q071	F-15
Q073	F-15
Q074	F-15
Q075	C-15
Q076	F-14
Q078	F-14
Q079	F-15
Q080	F-14
Q081	F-2
Q201	I-7
Q202	I-7
Q203	I-5
Q204	H-7
Q205	H-7
Q206	G-11
Q301	D-4
Q302	C-4
Q303	C-13
Q304	B-11
Q305	B-5
Q307	C-11
Q317	C-11
Q318	C-11
Q319	D-15
Q320	B-4
RV001	C-14
RV002	D-15
RV003	C-15
RV200	I-9
RV301	A-9
RV302	B-9
TP001	C-1
TP002	F-1
TP003	G-8
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-2

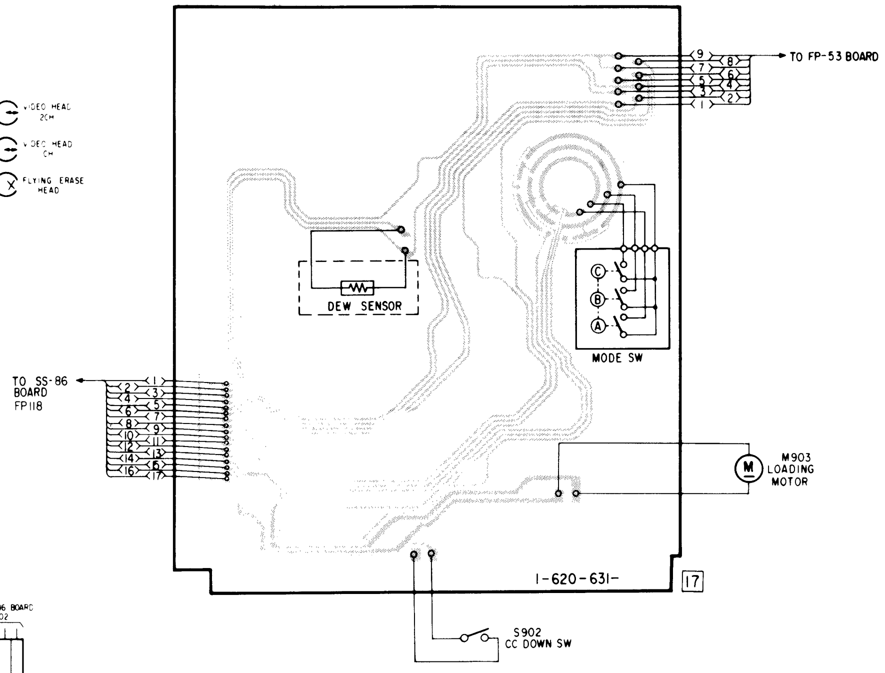
(TAPE SELECT/CASSETTE IN SWITCH) PRINTED WIRING BOARDS

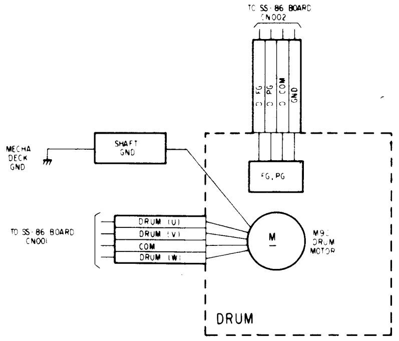

1-625-596-
21
5

TP001	C-1
TP002	F-1
TP003	G-8
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-2

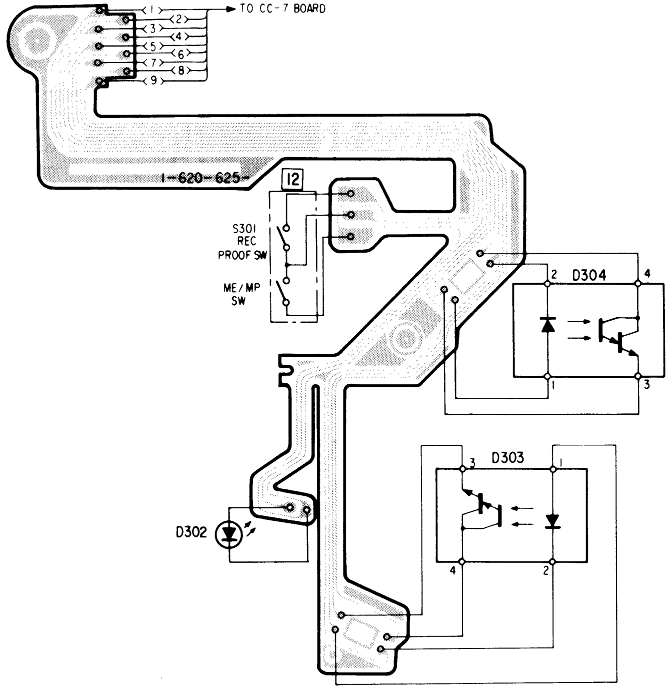

CN003
1
5
10
13
CH2 GND
CH2 (Y)
CH2 (X)
CH GND
CH (Y)
CH (X)
FE GND
FE (Y)
FE (X)
VIDEO HEAD 2CH
VIDEO HEAD CH
FLYING ERASE HEAD

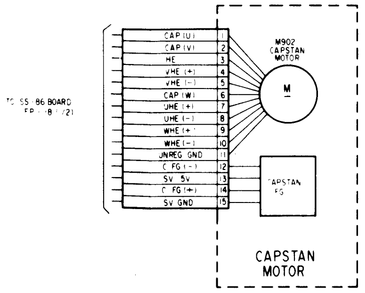
CC-7 BOARD


TO FP-53 BOARD
DEW SENSOR
MODE SW
TO SS-86 BOARD FP118
M903 LOADING MOTOR
1-620-631-
17
S902 CC DOWN SW

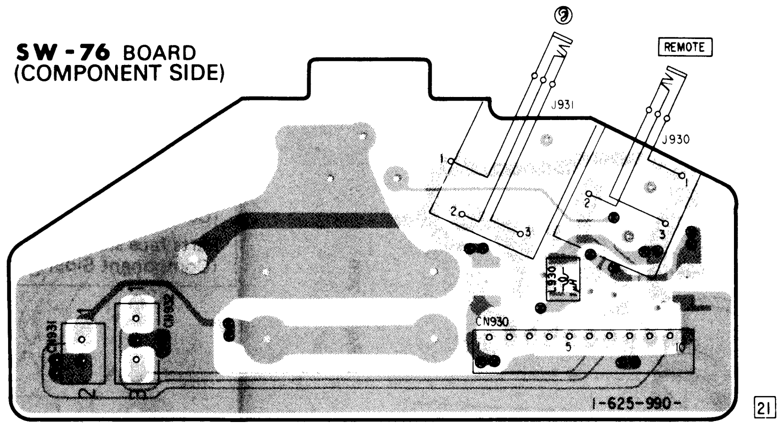

TO SS-86 BOARD CN002
FG
PG
COM
GND
MECHA DECK GND
SHAFT GND
FG, PG
TO SS-86 BOARD CN001
DRUM (U)
DRUM (V)
COM
DRUM (W)
M
M9 DRUM MOTOR
DRUM

FP-53 BOARD (FLEXIBLE)

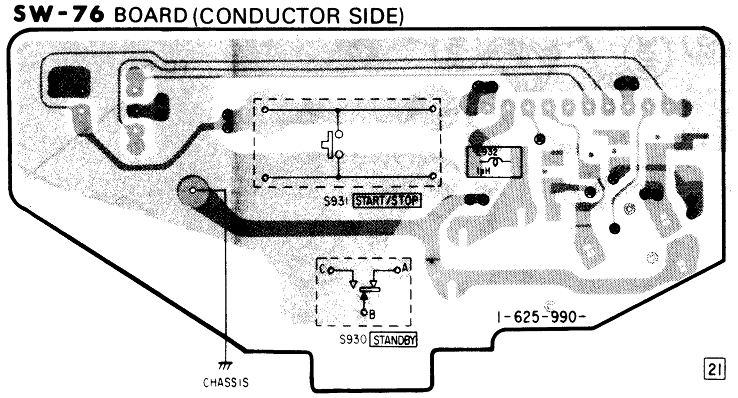

TO CC-7 BOARD
1-620-625-
12
S301 REC PROOF SW
ME/MP SW
D304
D303
D302


TO SS-86 BOARD FP-8 (2)
CAP (U)
CAP (V)
HE
VHE (+)
VHE (−)
CAP (W)
UHE (+)
UHE (−)
WHE (+)
WHE (−)
UNREG GND
C FG (−)
SV 5V
C FG (+)
SV GND
M902 CAPSTAN MOTOR
M
CAPSTAN FG
CAPSTAN MOTOR

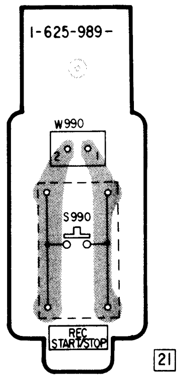
SW-76 BOARD (COMPONENT SIDE)


9
REMOTE
J931
J930
CN930
1-625-990-
21

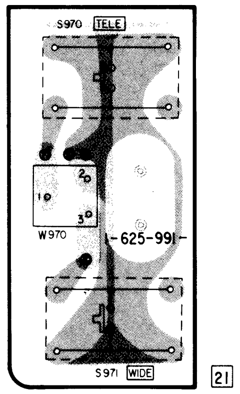
SW-76 BOARD (CONDUCTOR SIDE)

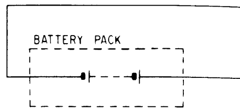

S931 START/STOP
S930 STANDBY
CHASSIS
1-625-990-
21

LA-1 BOARD

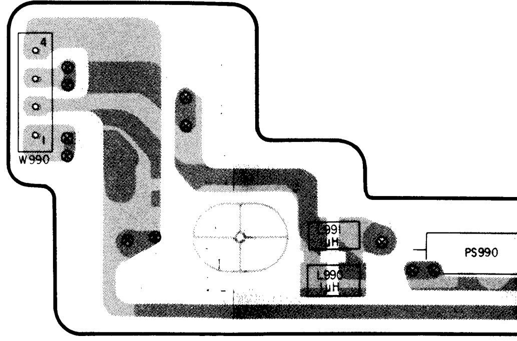

1-625-989-
W990
S990
REC START/STOP
21

ZM-7 BOARD

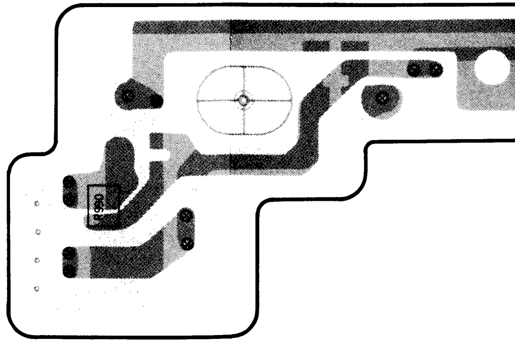

S970 TELE
W970
1-625-991-
S971 WIDE
21


BATTERY PACK

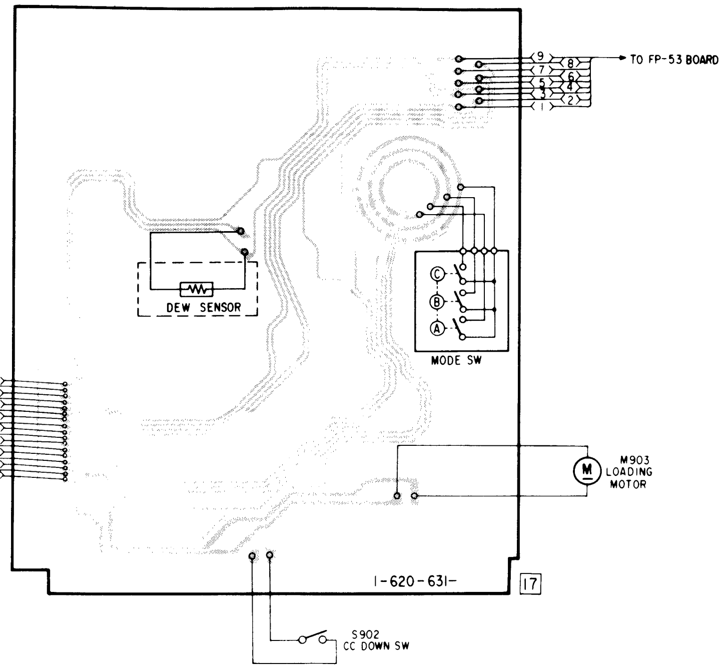
PA-13 BOARD (COMPONENT SIDE)


W990
S991
PS990

PA-13 BOARD (CONDUCTOR SIDE)

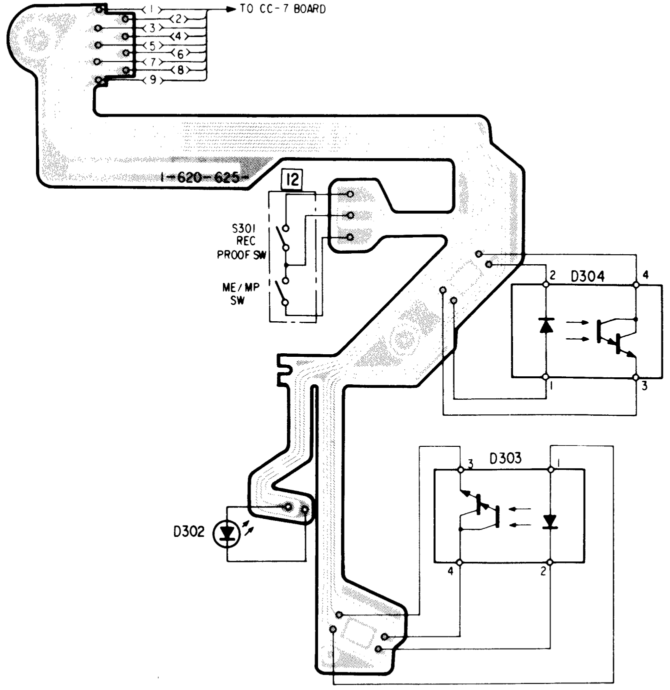


CC-7 BOARD



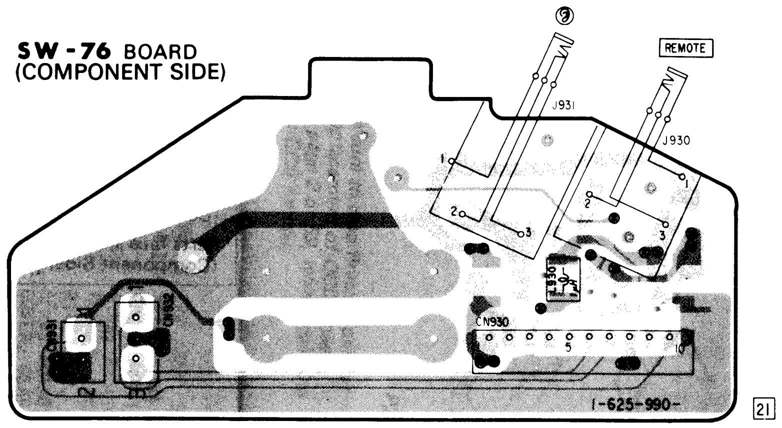
TO FP-53 BOARD
9
8
7
6
5
4
3
2
1
DEW SENSOR
Ⓒ
Ⓑ
Ⓐ
MODE SW
M903
LOADING
MOTOR
1-620-631-
17
S902
CC DOWN SW

FP-53 BOARD (FLEXIBLE)



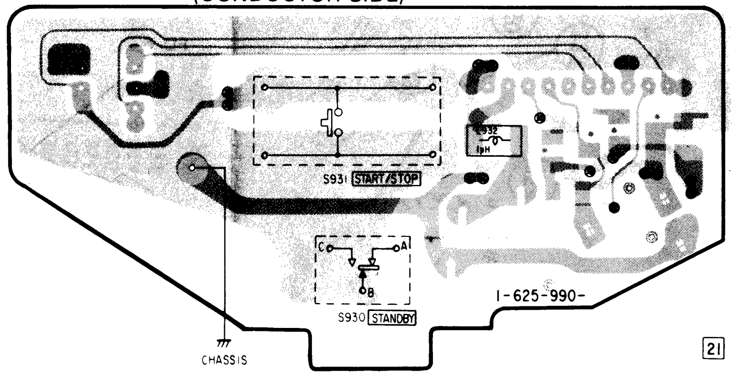
TO CC-7 BOARD
1
2
3
4
5
6
7
8
9
1-620-625-
12
S301
REC
PROOF SW
ME/MP
SW
D304
D303
D302

SW-76 BOARD
(COMPONENT SIDE)



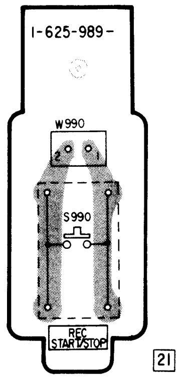
⑨
REMOTE
J931
J930
CN930
L930
5
10
1-625-990-
21

SW-76 BOARD (CONDUCTOR SIDE)



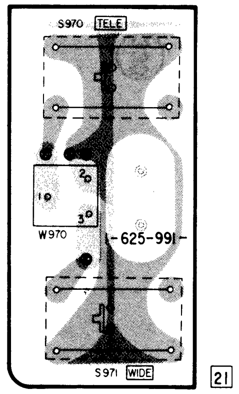
S931 START/STOP
L932
1μH
S930 STANDBY
C
A
B
CHASSIS
1-625-990-
21

LA-1 BOARD



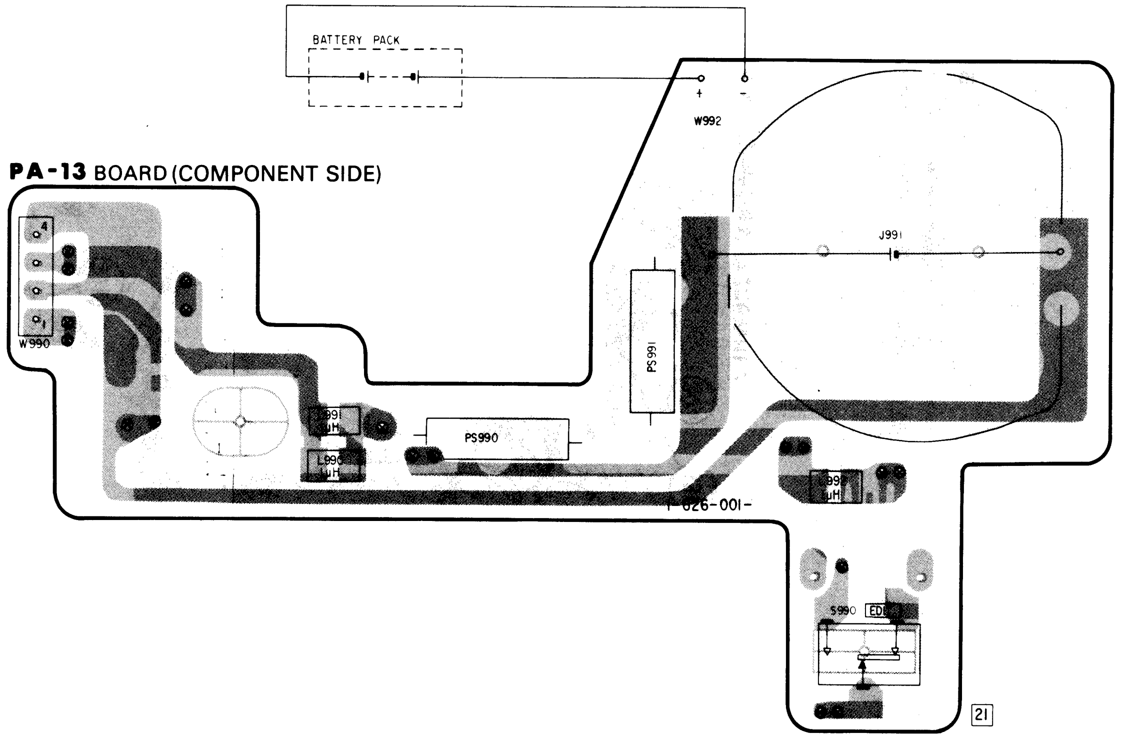
1-625-989-
W990
S990
REC
START/STOP
21

ZM-7 BOARD



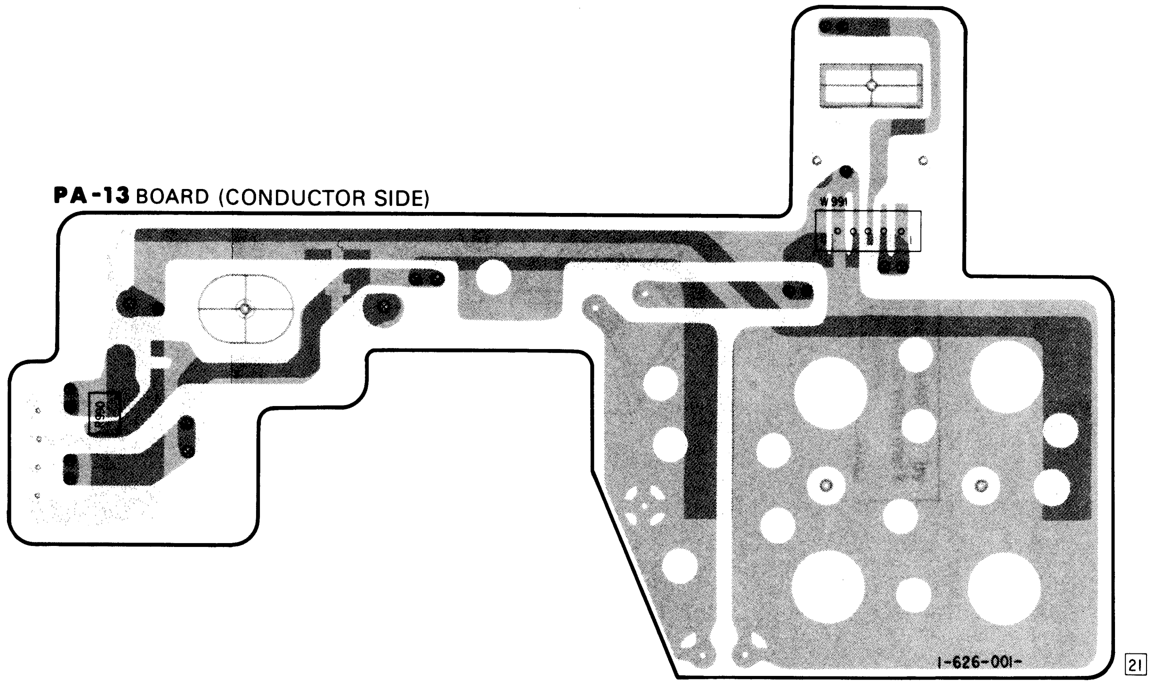
S970 TELE
W970
1-625-991-
S971 WIDE
21

PA-13 BOARD (COMPONENT SIDE)



BATTERY PACK
+
-
W992
W990
J991
PS991
PS990
L991
1μH
L990
1μH
L992
1μH
1-626-001-
S990 EDIT
21

PA-13 BOARD (CONDUCTOR SIDE)



W991
1-626-001-
21

4-7. FC-18 (MODE CONTROL), FV-1 (POWER SWITCH, VTR FUNCTION SWITCH), FD-6 (CAMERA DATA FUNCTION SWITCH), EJ-4 (EJECT SWITCH) PRINTED WIRING BOARDS

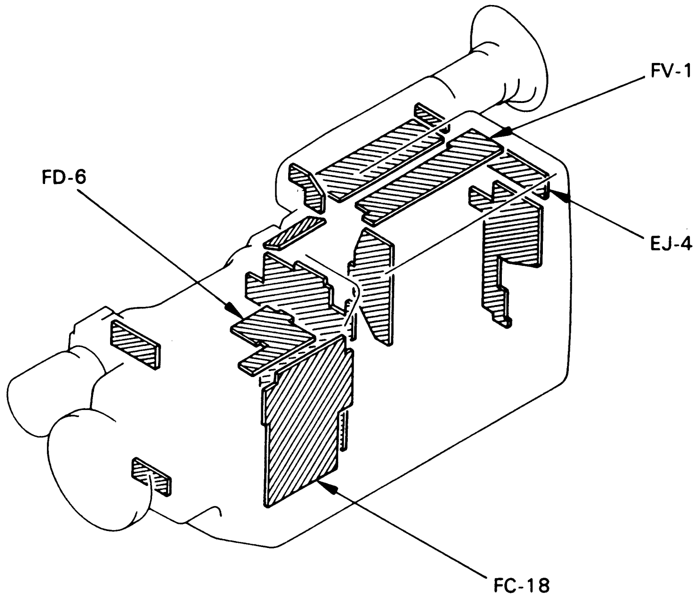
– Ref. No. FC-18, FV-1, FD-6, EJ-4 BOARDS: 7,000 series –

Note:

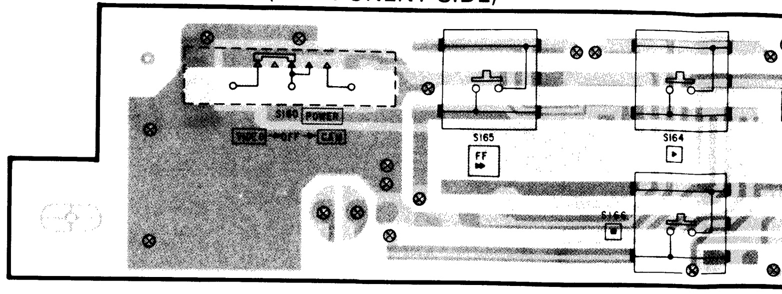
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.
- Digital transistor (FC-18: Q169, Q190) is transistor with resistor.
  Refer to FC-18 board schematic diagram.

Caution:

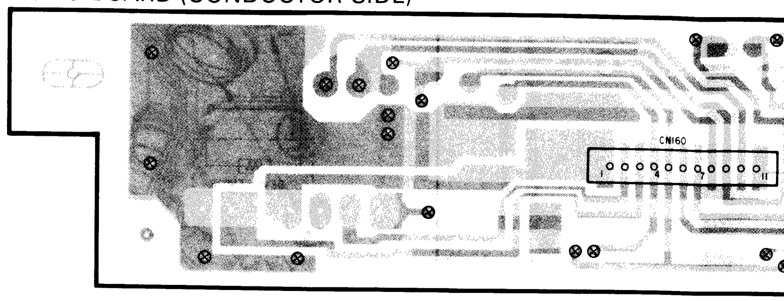
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.


FV-1
FD-6
EJ-4
FC-18

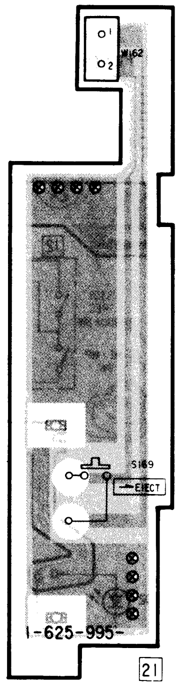
FV-1 BOARD (COMPONENT SIDE)

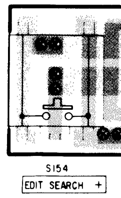

S160 POWER
VIDEO OFF CAM
S165
FF
S164
S166

FV-1 BOARD (CONDUCTOR SIDE)

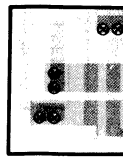


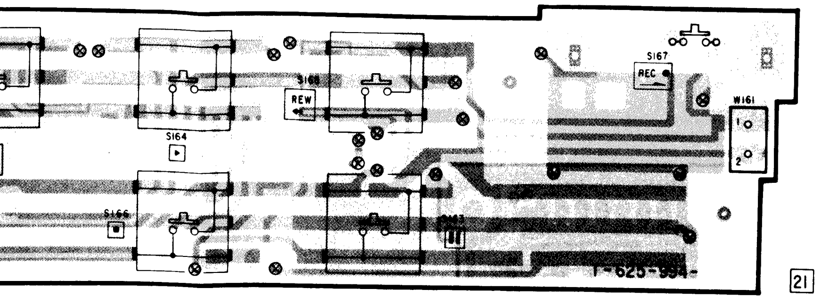
EJ-4 BOARD
(COMPONENT SIDE)

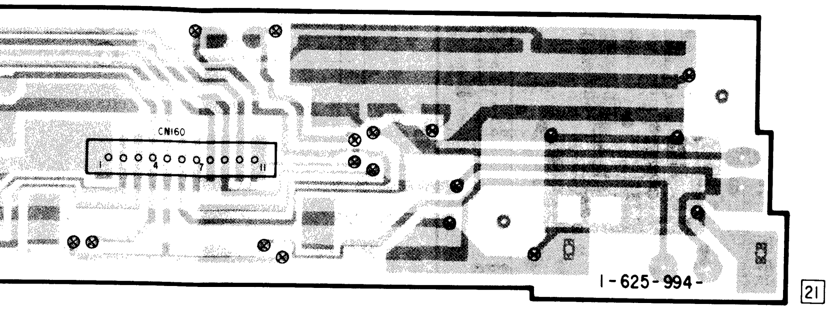

1
2
W162
S1
S169
EJECT
1-625-995-
21


S154
EDIT SEARCH +

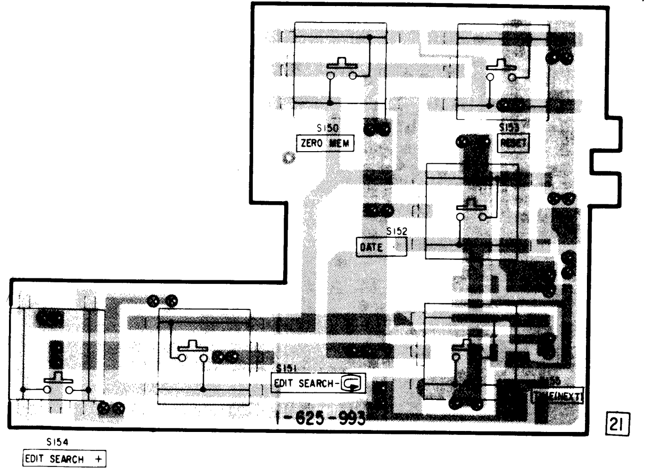
FD-6 BO



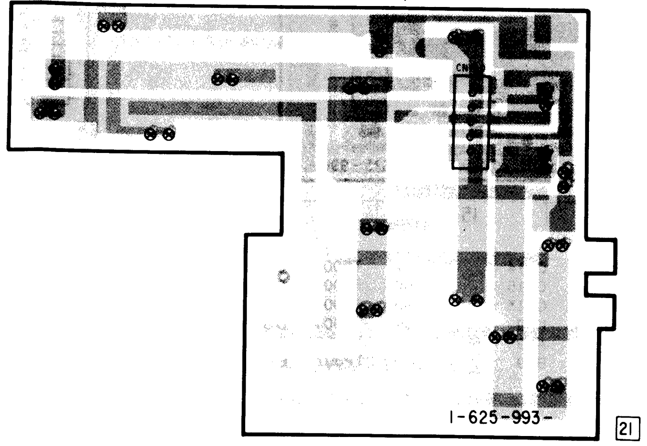

S167
REC
W161
S168
REW
S164
▶
S166
■
1-625-994-
21


CN160
1-625-994-
21

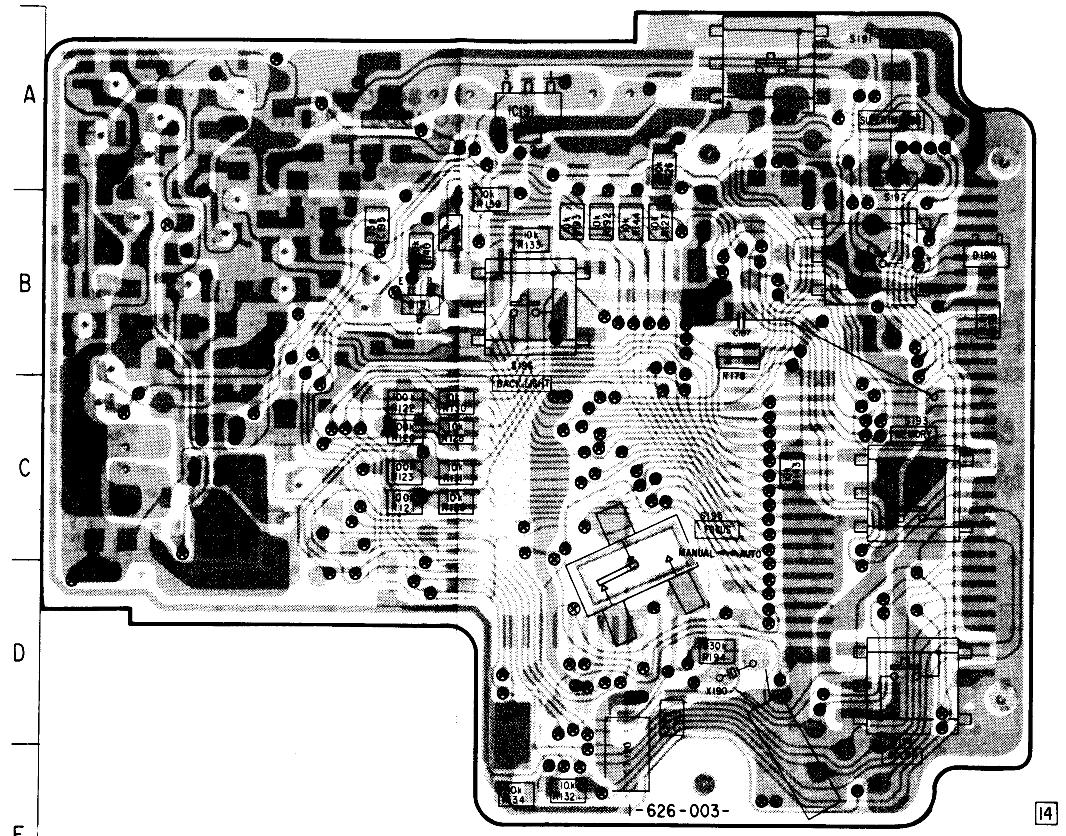
FD-6 BOARD (COMPONENT SIDE)


S150
ZERO MEM
S153
RESET
S152
DATE
S151
EDIT SEARCH-
S155
TIMER/EXT
S154
EDIT SEARCH +
1-625-993
21

FD-6 BOARD (CONDUCTOR SIDE)

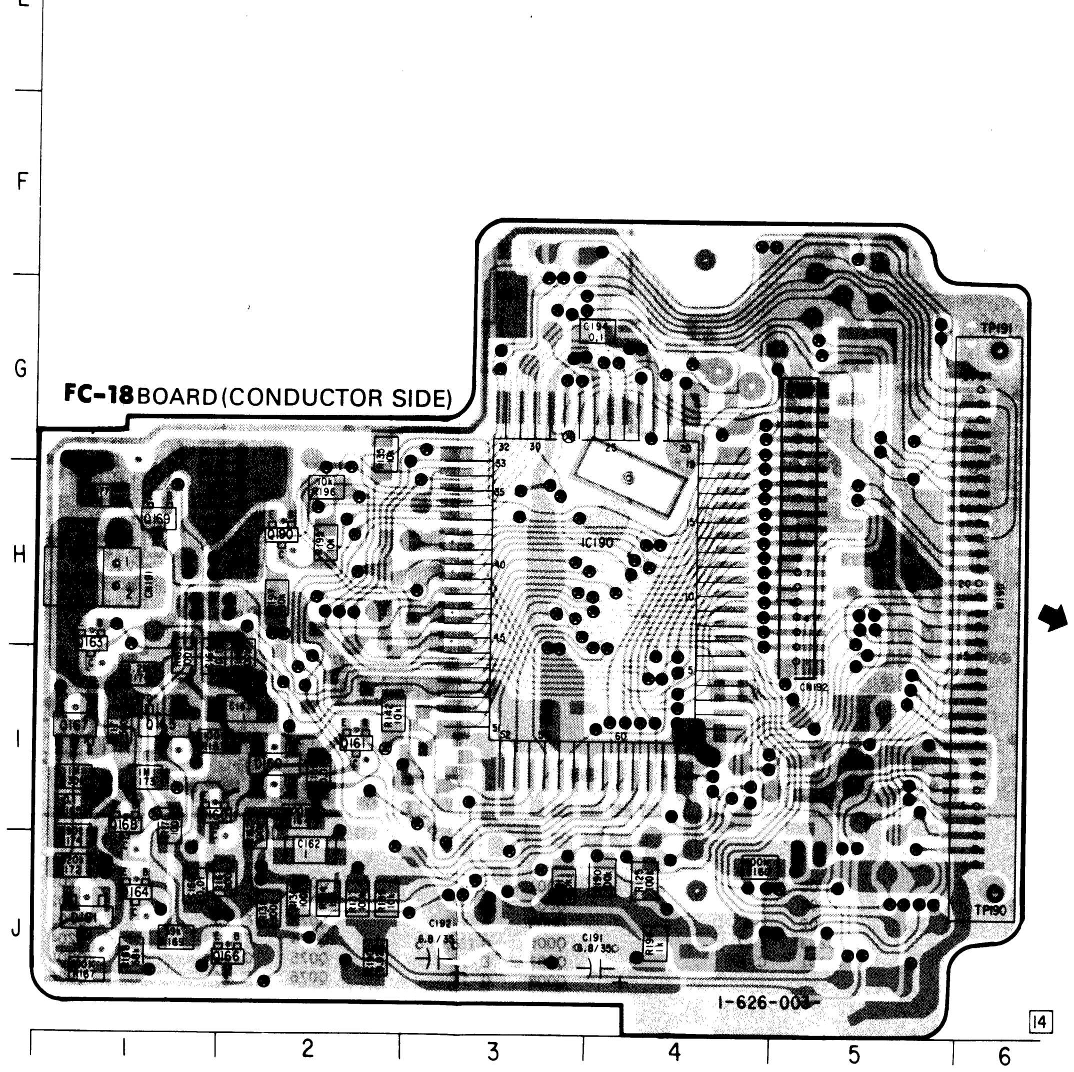


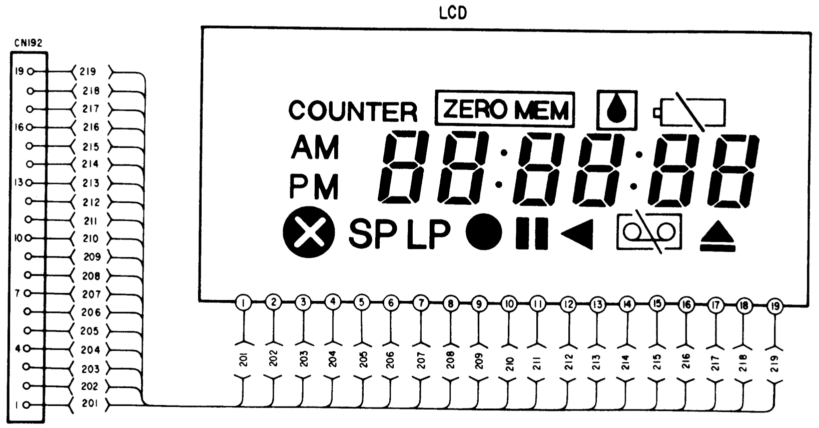
FC-18 BOARD (COMPONENT SIDE)


A
B
C
D
E
S191
IC191
S192
D190
S193
MEMORY
S194
BACK LIGHT
S195
MODE
MANUAL
AUTO
X190
1-626-003-
14

CN191	H-1
CN192	H-5
D160	I-2
D161	J-1
D190	B-6
IC190	H-3
IC191	A-3
Q160	I-2
Q161	I-2
Q163	H-1
Q164	J-1
Q165	I-1
Q166	J-2
Q167	I-1
Q168	I-1
Q169	H-2
Q190	H-2
Q191	B-3
TP190	J-6
TP191	G-6

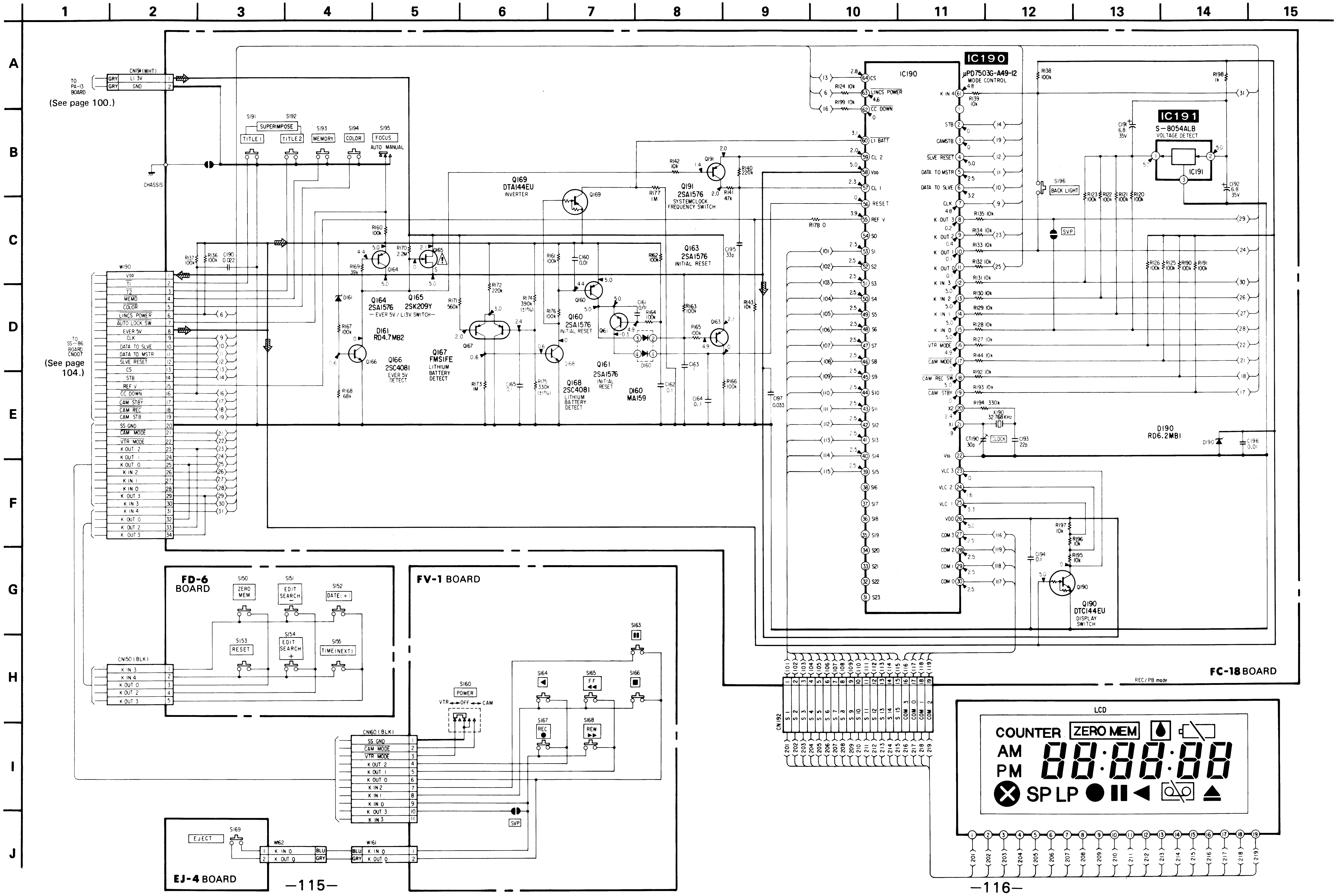
FC-18 BOARD (CONDUCTOR SIDE)


F
G
H
I
J
TP191
IC190
CN192
C192
C191
TP190
1-626-003
14
1
2
3
4
5
6


LCD
CN192
COUNTER
ZERO MEM
AM
PM
SP LP
88·88·88
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219

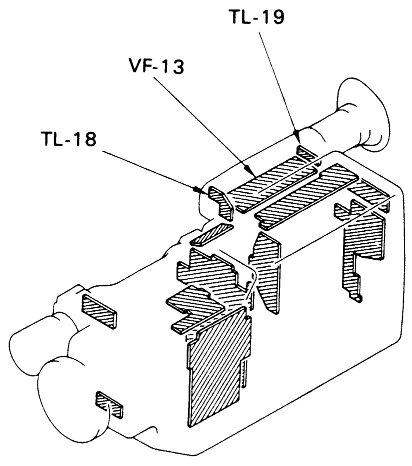
FC-18 (MODE CONTROL), FV-1 (POWER SWITCH, VTR FUNCTION SWITCH), FD-6 (CAMERA DATA FUNCTION SWITCH), EJ-4 (EJECT SWITCH) SCHEMATIC DIAGRAM

– Ref. No. FC-18, FV-1, FD-6, EJ-4 BOARDS: 7,000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
CN194 (WHT)
LI 3V
GND
GRY
TO PA-13 BOARD
(See page 100.)
CHASSIS
S191
S192
SUPERIMPOSE
TITLE 1
TITLE 2
S193
MEMORY
S194
COLOR
S195
FOCUS
AUTO MANUAL
W190
VDD
T1
T2
MEMO
COLOR
LINCS POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V
CC DOWN
CAM STBY
CAM REC
CAM STB
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
K IN 3
K IN 4
TO SS-86 BOARD CN007
(See page 104.)
Q164 2SA1576
Q165 2SK209Y
— EVER 5V / LI3V SWITCH—
D161 RD4.7MB2
Q166 2SC4081 EVER 5V DETECT
Q167 FMSIFE LITHIUM BATTERY DETECT
Q169 DTA144EU INVERTER
Q160 2SA1576 INITIAL RESET
Q168 2SC4081 LITHIUM BATTERY DETECT
Q161 2SA1576 INITIAL RESET
D160 MA159
Q163 2SA1576 INITIAL RESET
Q191 2SA1576 SYSTEMCLOCK FREQUENCY SWITCH
IC190
µPD7503G-A49-12
MODE CONTROL
CS
LINCS POWER
CC DOWN
LI BATT
CL 2
VDD
CL 1
RESET
REF V
S0
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
S17
S18
S19
S20
S21
S22
S23
K IN 4
STB
CAMSTB
SLVE RESET
DATA TO MSTR
DATA TO SLVE
CLK
K OUT 3
K OUT 2
K OUT 1
K OUT 0
K IN 3
K IN 2
K IN 1
K IN 0
VTR MODE
CAM MODE
CAM REC SW
CAM STBY
X2
X1
VSS
VLC 3
VLC 2
VLC 1
VDD
COM 3
COM 2
COM 1
COM 0
X190 32.768KHz
CLOCK
IC191
S-8054ALB
VOLTAGE DETECT
S196
BACK LIGHT
SVP
D190 RD6.2MB1
Q190 DTC144EU DISPLAY SWITCH
FC-18 BOARD
REC/PB mode
CN192
LCD
COUNTER
ZERO MEM
AM
PM
88:88:88
SP LP
FD-6 BOARD
S150 ZERO MEM
S151 EDIT SEARCH −
S152 DATE(+)
S153 RESET
S154 EDIT SEARCH +
S155 TIME(NEXT)
CN150 (BLK)
K IN 3
K IN 4
K OUT 0
K OUT 2
K OUT 3
FV-1 BOARD
S160 POWER
VTR ← OFF → CAM
S163
S164
S165 FF
S166
S167 REC
S168 REW
CN160 (BLK)
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
K IN 3
SVP
EJ-4 BOARD
EJECT
S169
W162
K IN 0
K OUT 0
BLU
GRY
W161

4-8. VF-13 (VIEW FINDER), TL-18 (LED), TL-19 (LED) PRINTED WIRING BOARDS

– Ref. No. VF-13, TL-18, TL-19 BOARDS: 8,000 series –

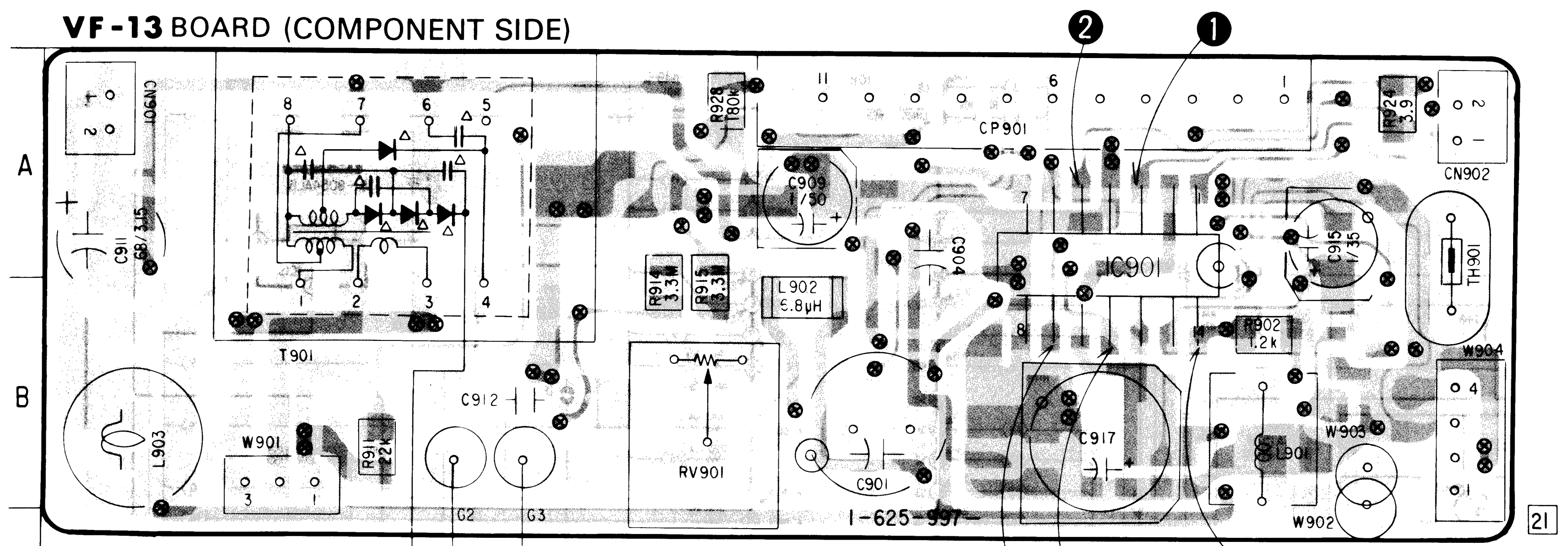

TL-19
VF-13
TL-18

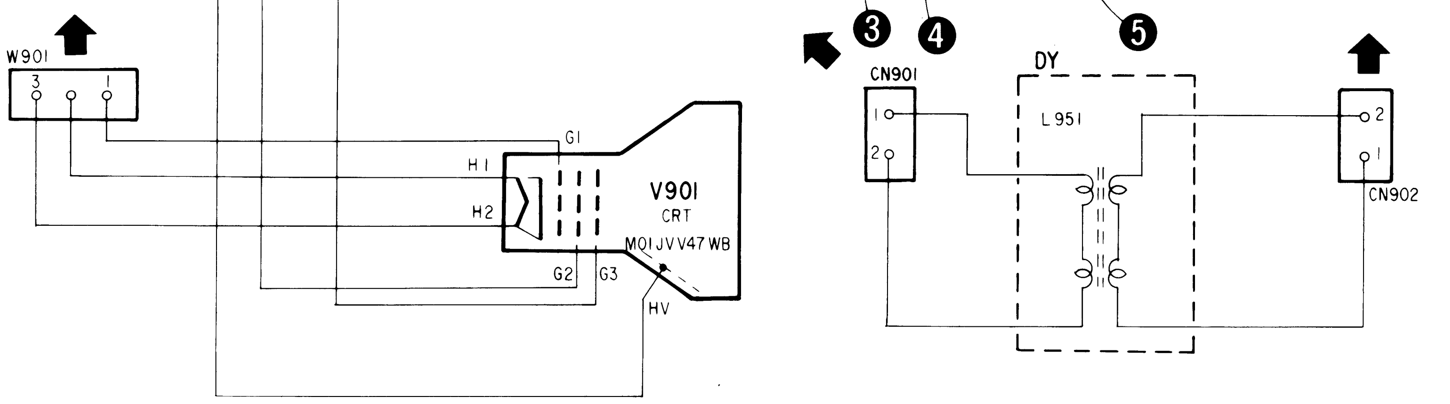
Note:
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

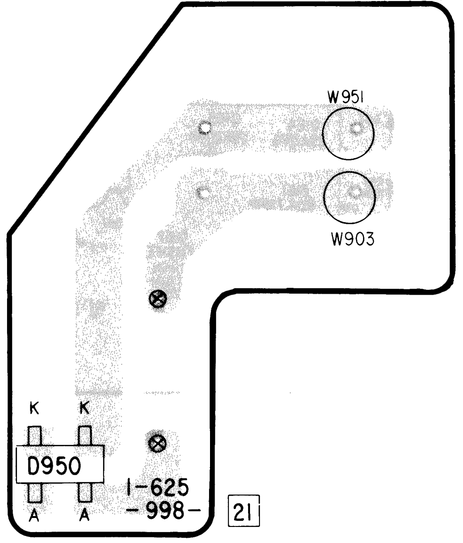
VF-13 BOARD (COMPONENT SIDE)


❷
❶
A
B
CN901
C911 68/3.15
T901
8 7 6 5
1 2 3 4
L903
W901
3 1
R911 22k
R928 180k
CP901
6
C909 1/50
R914 3.3M
R915 3.3M
L902 6.8μH
C912
G2
G3
RV901
C904
7
8
IC901
C901
C917
R902 1.2k
C915 1/35
R924 3.9
CN902
2 1
TH901
W904
4 1
L901
W903
W902
1-625-997-
21

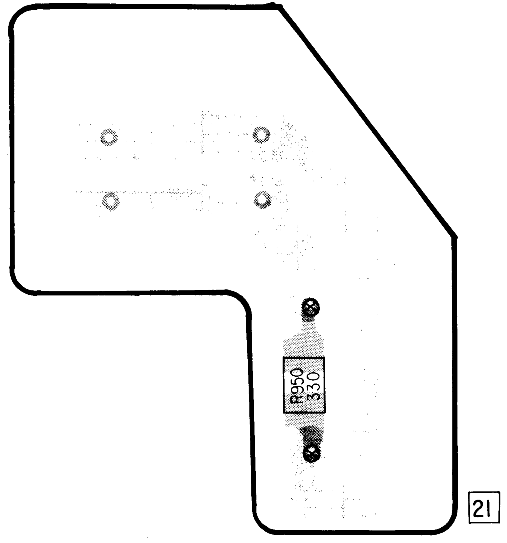

❸
❹
❺
W901
3 1
G1
H1
H2
V901
CRT
M01JVV47WB
G2
G3
HV
CN901
1
2
DY
L951
CN902
2
1
C
D

CN901	A-1
CN902	A-7
D903	F-1
IC901	A-5
Q903	E-5
Q904	E-2
RV901	B-3

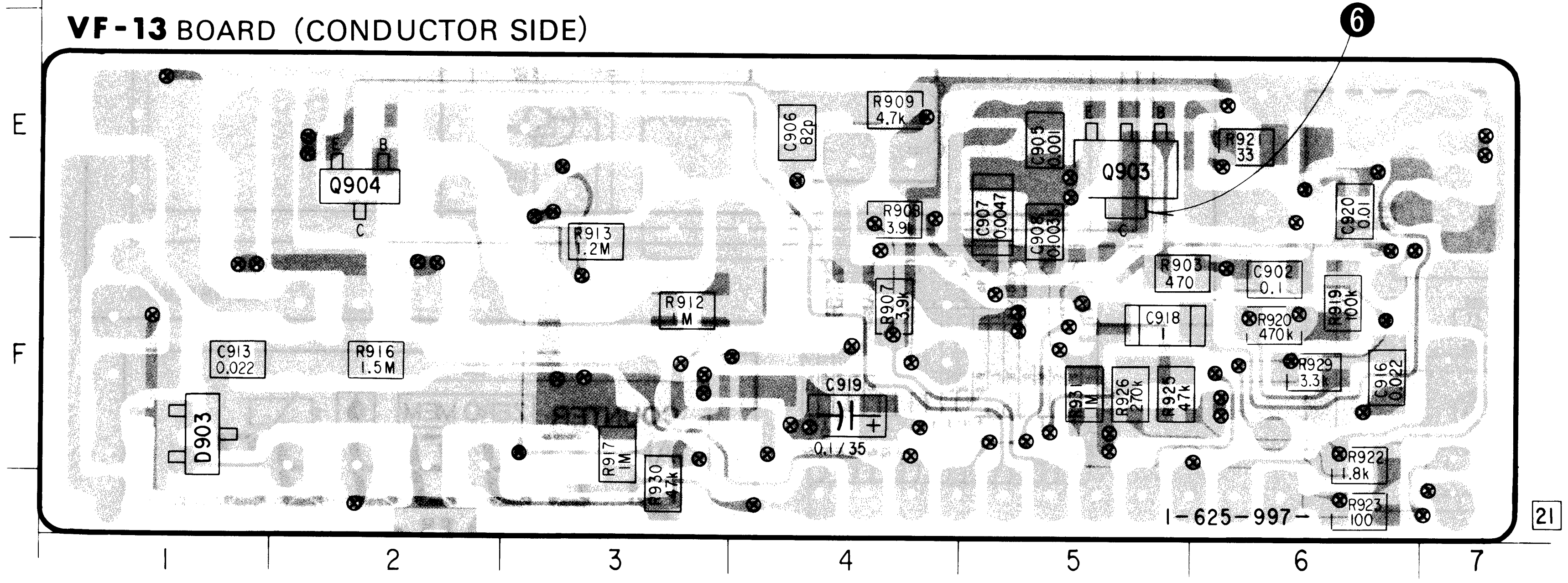
TL-18 BOARD (COMPONENT SIDE)


W951
W903
K K
D950
A A
1-625-998-
21

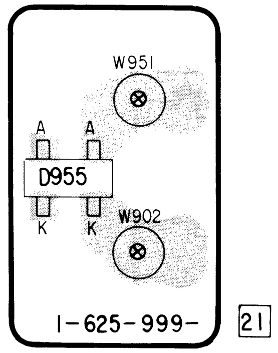
TL-18 BOARD (CONDUCTOR SIDE)



VF-13 BOARD (CONDUCTOR SIDE)

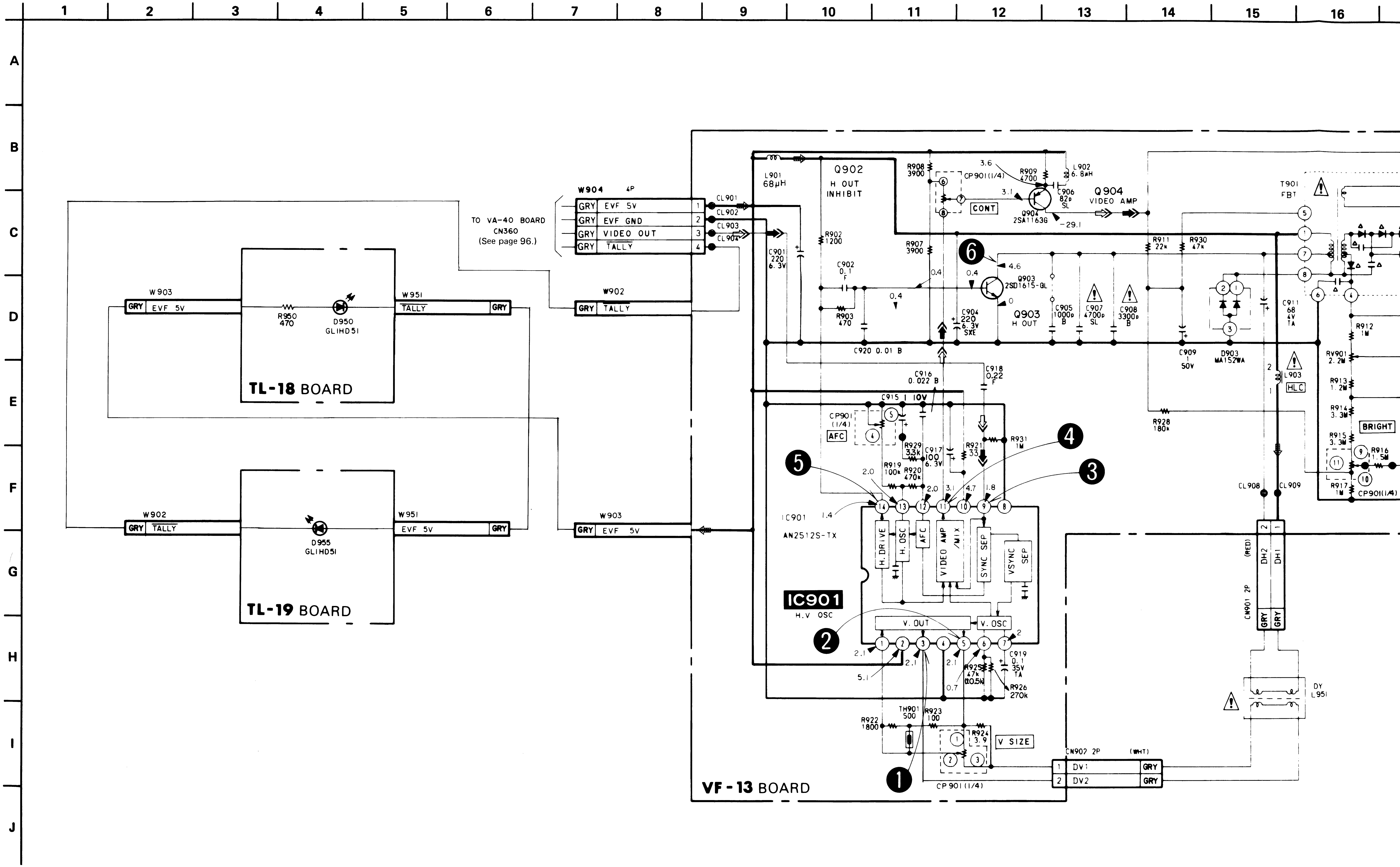

❻
E
F
Q904
B
C
R913 1.2M
R912 1M
C913 0.022
R916 1.5M
D903
R917 1M
R930 4.7k
C919 0.1/35
C906 82p
R909 4.7k
R908 3.9k
R907 3.9k
C907 0.0047
C905 0.001
C908 0.003
Q903
R921 33
R903 470
C902 0.1
C918 1
R920 470k
R919 100k
C920 0.01
R926 270k
R925 47k
R929 3.3k
C916 0.022
R922 1.8k
R923 100
1-625-997-
21
1 2 3 4 5 6 7

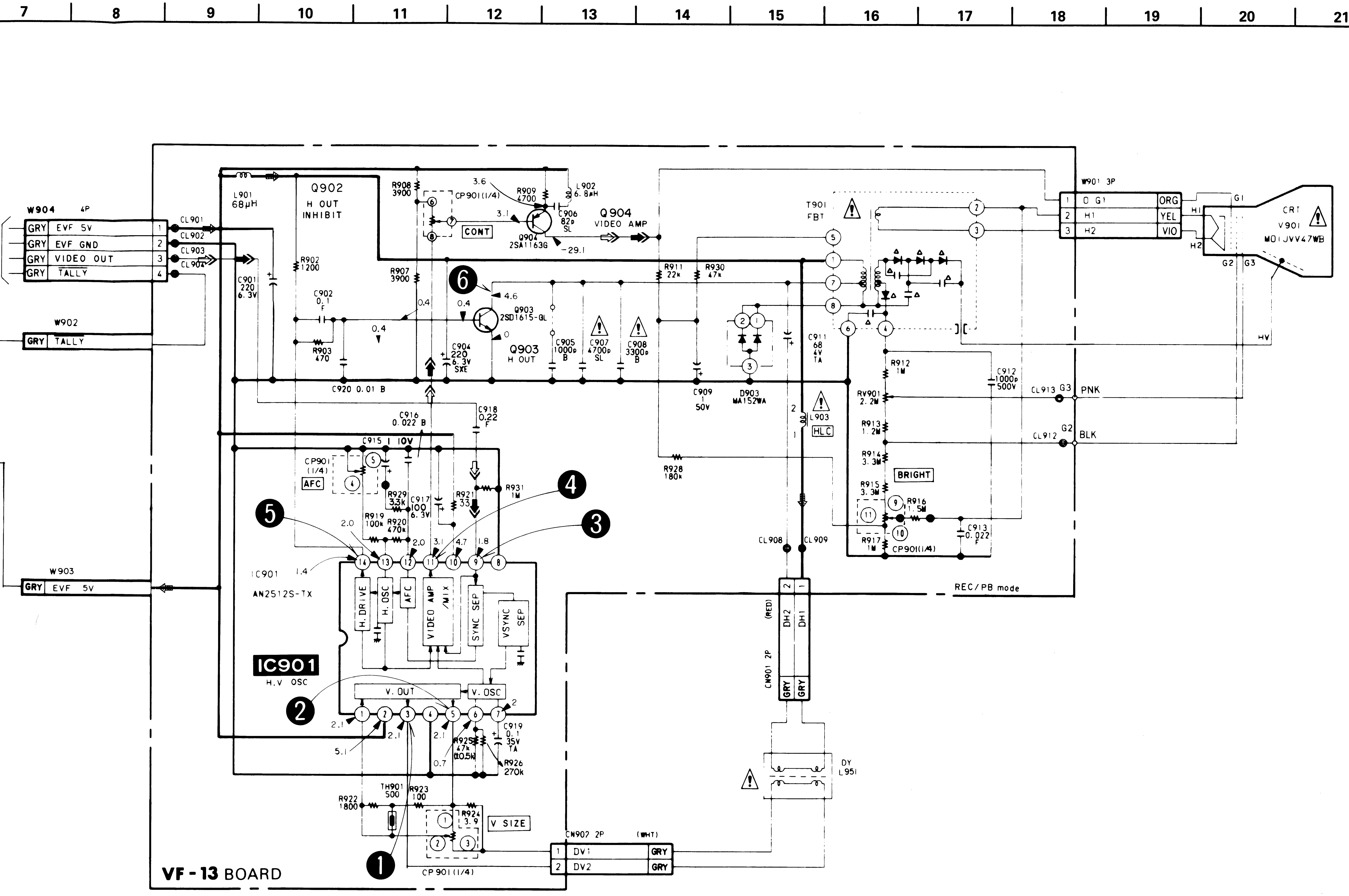
TL-19 BOARD (COMPONENT SIDE)

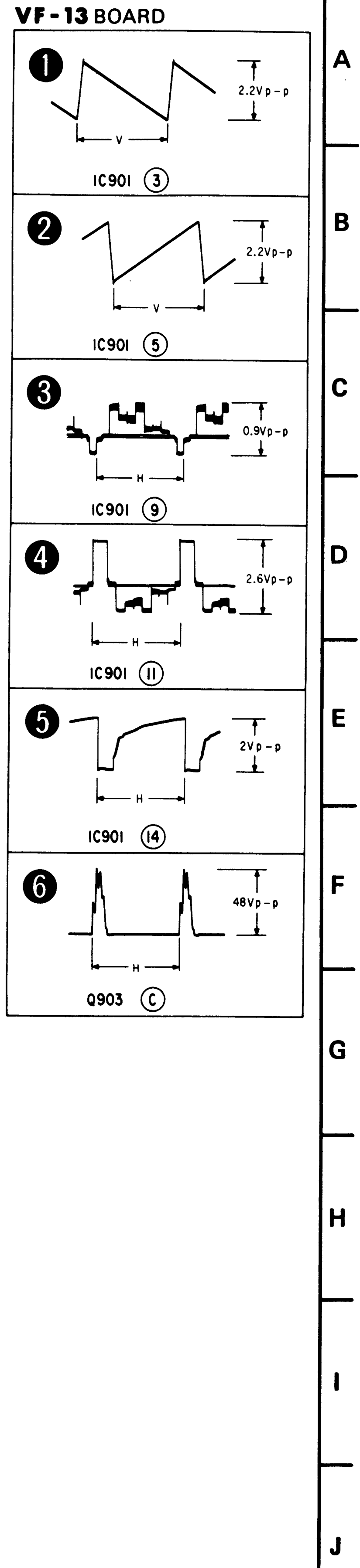

W951
A A
D955
K K
W902
1-625-999-
21

VF-13 (VIEW FINDER), TL-18 (LED), TL-19 (LED) SCHEMATIC DIAGRAM

– Ref. No. VF-13, TL-18, TL-19 BOARDS: 8,000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
W904 4P
GRY EVF 5V 1
GRY EVF GND 2
GRY VIDEO OUT 3
GRY TALLY 4
TO VA-40 BOARD CN360 (See page 96.)
CL901
CL902
CL903
CL904
W903
GRY EVF 5V
R950 470
D950 GL1HD51
W951
TALLY GRY
TL-18 BOARD
W902
GRY TALLY
D955 GL1HD51
W951
EVF 5V GRY
TL-19 BOARD
W902
GRY TALLY
W903
GRY EVF 5V
L901 68μH
C901 220 6.3V
Q902 H OUT INHIBIT
R902 1200
C902 0.1 F
R903 470
C920 0.01 B
R908 3900
CP901(1/4)
CONT
3.6
3.1
R909 4700
Q904 2SA1163G
-29.1
L902 6.8μH
C906 82p SL
Q904 VIDEO AMP
R907 3900
0.4
0.4
0.4
4.6
0
Q903 2SD1615-GL
Q903 H OUT
C904 220 6.3V SXE
C905 1000p B
C907 4700p SL
C908 3300p B
R911 22k
R930 47k
D903 MA152WA
C909 1 50V
C911 68 4V TA
T901 FBT
R912 1M
RV901 2.2M
R913 1.2M
R914 3.3M
R915 3.3M
BRIGHT
R916 1.5M
R917 1M
CP901(1/4)
L903
HLC
R928 180k
C916 0.022 B
C918 0.22 F
C915 1 10V
CP901 (1/4)
AFC
R929 3.3k
C917 100 6.3V
R921 33
R931 1M
R919 100k
R920 470k
2.0
2.0
3.1
4.7
1.8
1.4
IC901 AN2512S-TX
H. DRIVE
H. OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
IC901 H.V OSC
V. OUT
V. OSC
2.1
5.1
2.1
2.1
0.7
2
C919 0.1 35V TA
R925 47k (0.5W)
R926 270k
TH901 500
R922 1800
R923 100
R924 3.9
V SIZE
CP901(1/4)
CN902 2P (WHT)
1 DV1 GRY
2 DV2 GRY
CL908
CL909
CN901 2P (RED)
DH2 DH1
GRY GRY
DY L951
VF-13 BOARD
❶
❷
❸
❹
❺
❻


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
W904 4P
GRY EVF 5V
GRY EVF GND
GRY VIDEO OUT
GRY TALLY
CL901
CL902
CL903
CL904
W902
GRY TALLY
W903
GRY EVF 5V
L901 68μH
Q902 H OUT INHIBIT
R902 1200
C902 0.1 F
R903 470
C901 220 6.3V
C920 0.01 B
R908 3900
R907 3900
CP901(1/4)
CONT
3.6
3.1
R909 4700
Q904 2SA1163G
-29.1
L902 6.8μH
C906 82p SL
Q904 VIDEO AMP
4.6
0.4
0.4
Q903 2SD1615-GL
0
Q903 H OUT
C904 220 6.3V SXE
C905 1000p B
C907 4700p SL
C908 3300p B
C916 0.022 B
C918 0.22 F
C915 1 10V
CP901 (1/4)
AFC
R929 3.3k
R919 100k
R920 470k
C917 100 6.3V
R921 33
R931 1M
2.0
2.0
3.1
4.7
1.8
1.4
IC901 AN2512S-TX
H.DRIVE
H.OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
IC901 H.V OSC
V.OUT
V.OSC
2.1
2.1
5.1
2.1
0.7
2
R925 47k (0.5k)
C919 0.1 35V TA
R926 270k
R922 1800
TH901 500
R923 100
R924 3.9
V SIZE
CP901(1/4)
CN902 2P (WHT)
DV1
DV2
GRY
GRY
VF-13 BOARD
R911 22k
R930 47k
C909 1 50V
D903 MA152WA
C911 68 4V TA
T901 FBT
L903
HLC
CL908
CL909
CN901 2P (RED)
DH2
DH1
GRY
GRY
DY L951
R912 1M
RV901 2.2M
R913 1.2M
R914 3.3M
R915 3.3M
BRIGHT
R916 1.5M
R917 1M
CP901(1/4)
C912 1000p 500V
C913 0.022 F
R928 180k
CL913 G3 PNK
CL912 G2 BLK
REC/PB mode
W901 3P
0 G1
H1
H2
ORG
YEL
VIO
CRT V901 M01JVV47WB
G1
H1
H2
G2
G3
HV



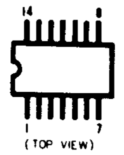
- **Signal path**

➡ : REC Y/CHROMA Signal

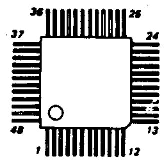
⇨ : PB Y/CHROMA Signal

4-10. SEMICONDUCTORS

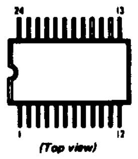
AN2512S
TC40H008F
µPD4066BG


14
8
1
7
(TOP VIEW)

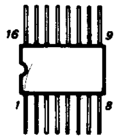
CX20055
CXA1202R


36
25
37
24
48
13
1
12

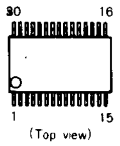
CX20114
CXA1203N


24
13
1
12
(Top view)

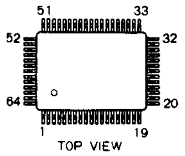
CX20115A
CXA1157M
µPD6142G-101



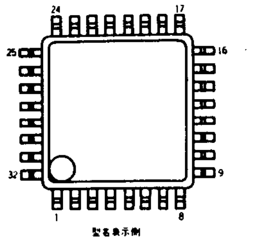
CXA1127MTP-1
CXL1502M-T1


30
16
1
15
(Top view)

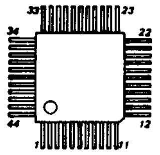
CXA1200AQ
CXA1200BQ
MB670493
µPD7503G-A49
µPD78112GF-509-3BE


51
33
52
32
64
20
1
19
TOP VIEW

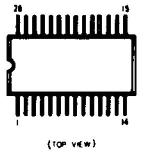
CXA1201Q


24
17
25
16
32
9
1
8

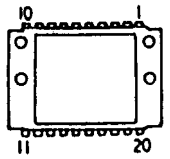
CXA1204Q
µPD7507HG-532-22


33
23
34
22
44
12
1
11

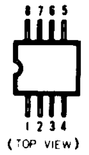
CXD1030M
CXK58257M-10LL


28
15
1
14
(TOP VIEW)

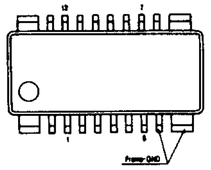
IU021CK-AA



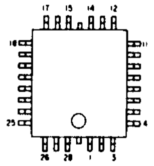
LA7293
MC34182M
NJM2233AM
µPC358G2
µPC393G2


8 7 6 5
1 2 3 4
(TOP VIEW)

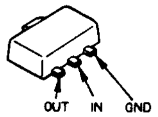
LB1631M



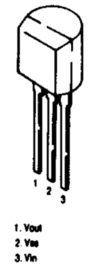
MC146805F2FPSC82534



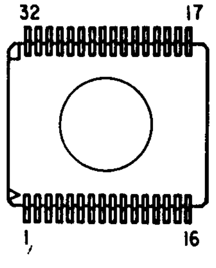
S-8054ALB-LM-S



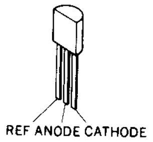
S-81350AG


1
2
3
1. Vout
2. Vss
3. Vin

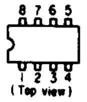
SBX1505-21



TL431CLPB


REF ANODE CATHODE

µPC311G2


8 7 6 5
1 2 3 4
(Top view)

2SA812-M6
2SA1163
2SA1226-4
2SA1576R
2SA1676
2SA1677
2SB624-BV4
2SC1622A
2SC1623-L6
2SC1623-L7
2SC2223-F13
2SC2757-T34
2SC3396
2SC3898
2SC4081
2SC4396
DTA124EU
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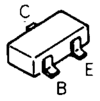
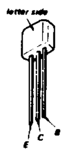
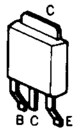
DTC144EK
DTC144EU



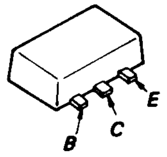
2SA1175



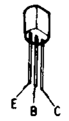
2SA1341



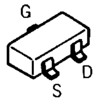
2SB798
2SB804-AW
2SB1121
2SD1615



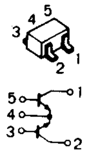
2SB926-T



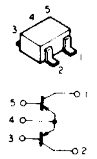
2SK94-X2



FMG2
FMW1
XN1213


5
4
3
1
2
5
4
3
1
2

FMS1
FMS1FE
XN1113


5
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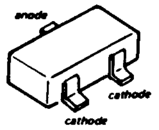
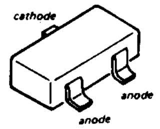
3
1
2

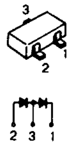
1S2835
MA152WA


anode
cathode
cathode

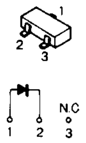
1S2837


cathode
anode
anode

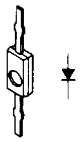
1SS123



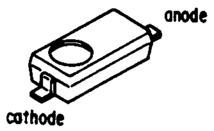
1SS187



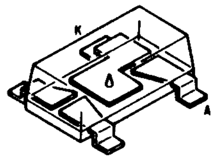
1T32-2



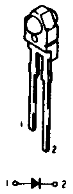
1T33C-01


anode
cathode

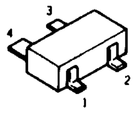
GL1HD51



GL452S

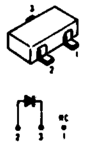


MA159

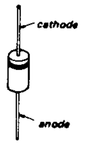


1. CATHODE
2. CATHODE
3. ANODE
4. ANODE

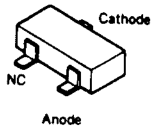
RD2.4M-B
RD4.7M-B2
RD6.2M-B1
RD9.1M-B1



RD2.7EB2


cathode
anode

SB05-05-CP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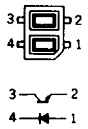
NC
Anode

TLP907-0



NOTE:

- The me
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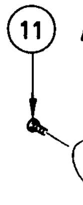
supplied
- The co
part a
number

5-1. R



No.	Pa
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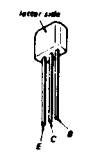
4	3-
5	X-
6	X-
7	3-
8	3-
9	*3-

2SA1175



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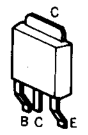

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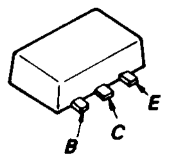

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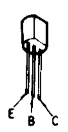

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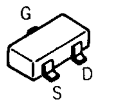

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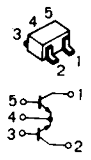
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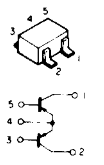
1
2

FMS1
FMS1FE
XN1113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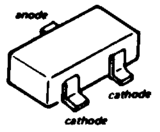
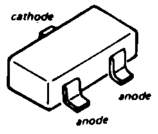
2

1S2835
MA152WA


anode
cathode
cathode

1S2837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anode
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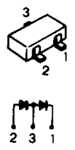
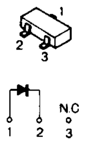
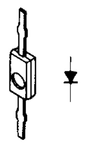


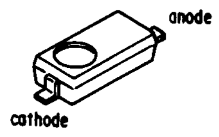
1SS187



1T32-2



1T33C-01


anode
cathode

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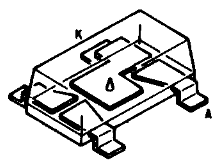
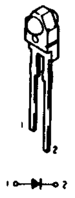
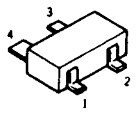


GL452S

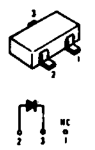


MA159

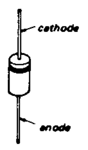


1. CATHODE
2. CATHODE
3. ANODE
4. ANODE

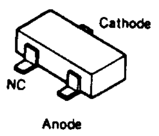
RD2.4M-B
RD4.7M-B2
RD6.2M-B1
RD9.1M-B1



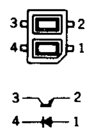
RD2.7EB2


cathode
anode

SB05-05-CP


Cathode
NC
Anode

TLP907-0



SECTION 5

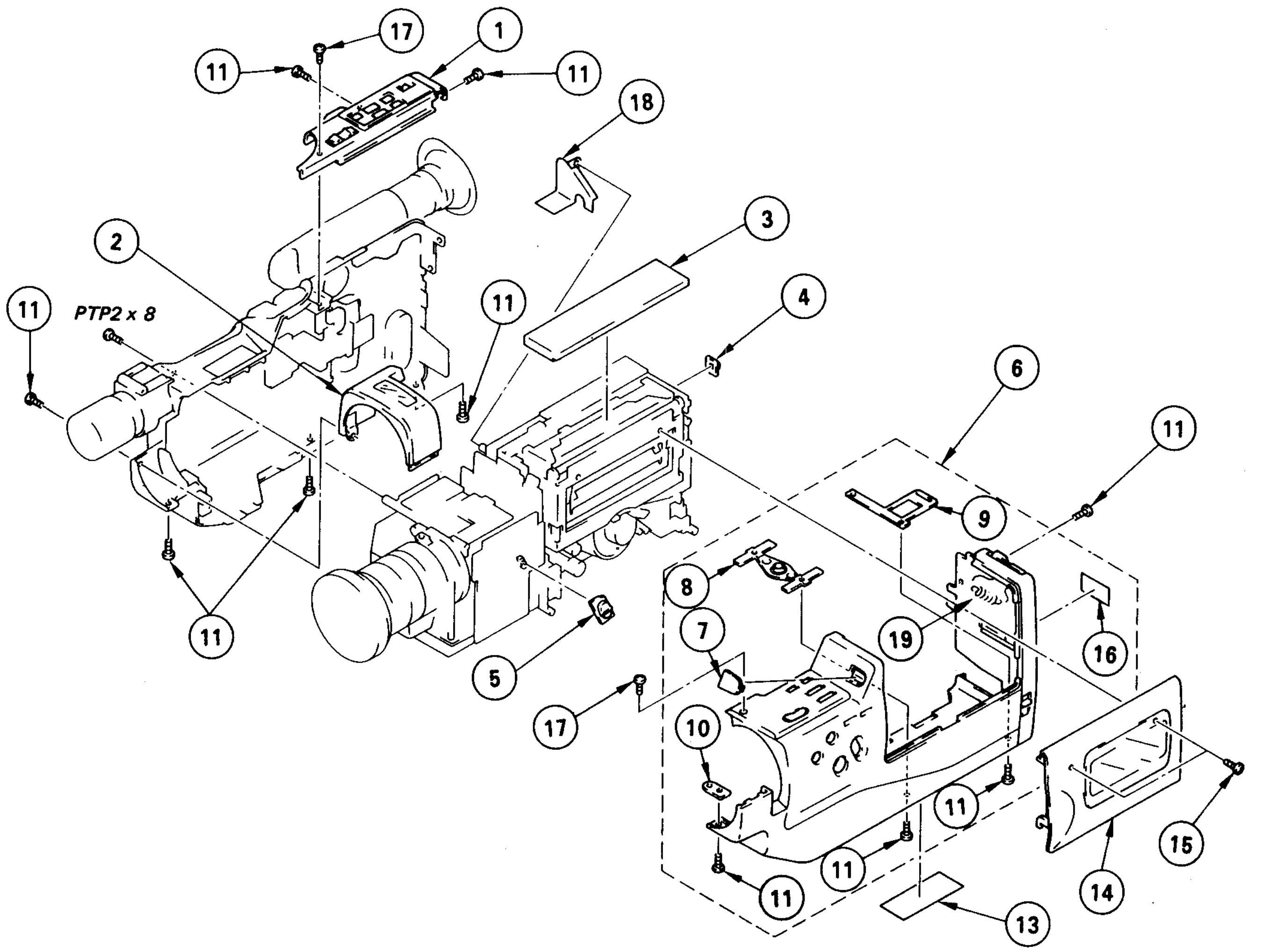
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-1. RIGHT CABINET ASSEMBLY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PTP2 x 8
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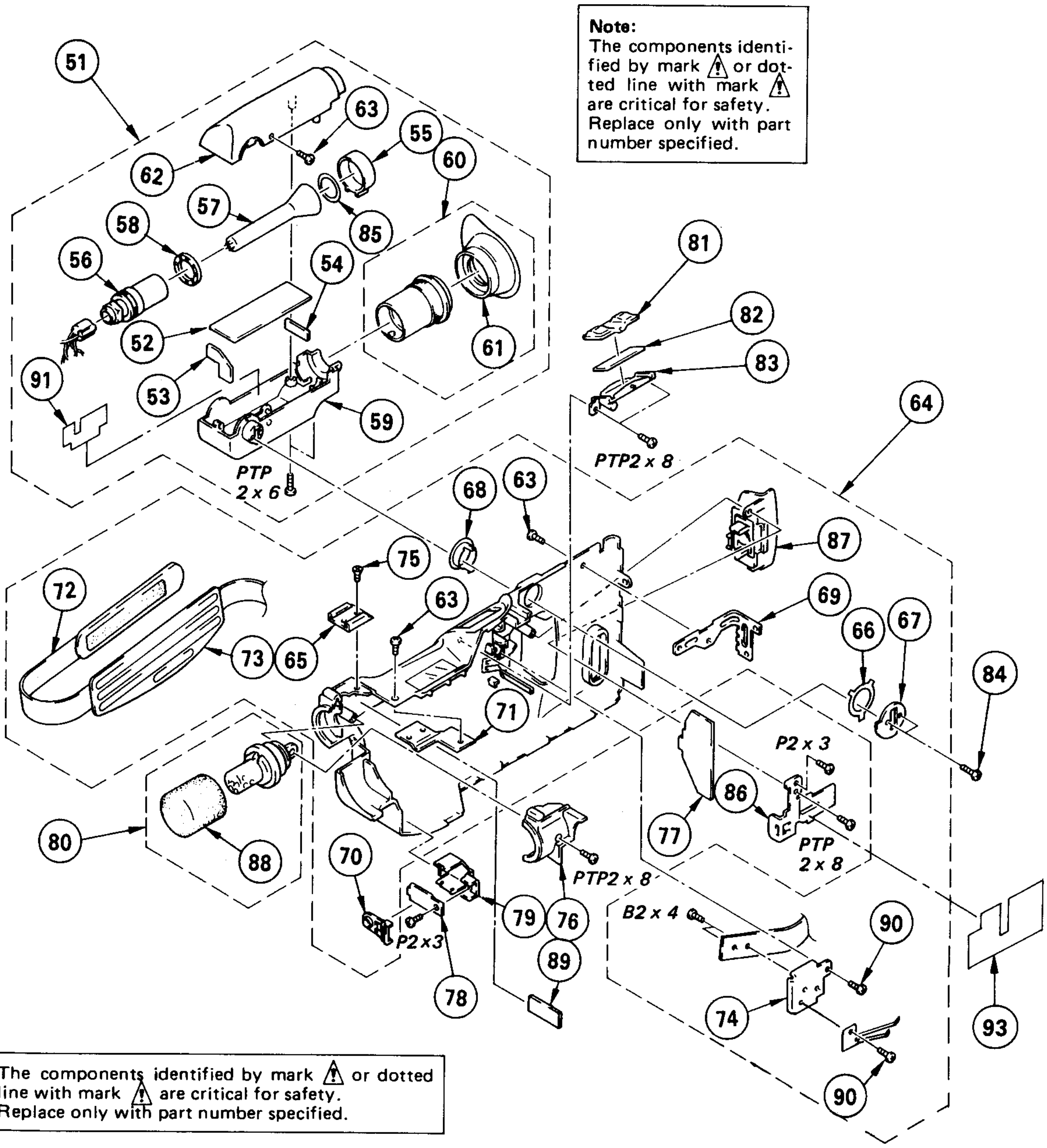
13

No.	Part No.	Description	Remark
1	X-3724-575-1	PANEL ASSY, VTR	
2	X-3724-512-1	COVER ASSY, CAMERA	
3	X-3724-568-1	LID ASSY, LS	
4	3-724-593-01	KEY TOP	
5	X-3724-511-1	KNOB ASSY, FOCUS	
6	X-3724-573-1	CABINET (RIGHT) (CASSETTE SIDE) ASSY	7-11, 16, 19
7	3-724-504-01	CAP, W/B	
8	3-724-507-01	SCREW, TRIPOD	
9	*3-724-509-01	PLATE (LOWER), STRAP	
10	3-724-522-01	JOINT (LOWER), LR	
11	3-719-381-01	SCREW (M2X4)	
13	*3-726-549-01	LABEL, MODEL NUMBER (AEP MODEL)	
	*3-726-564-01	LABEL, MODEL NUMBER (UK/E/AUS MODEL)	
14	X-3724-576-1	LID ASSY, CASSETTE	
15	3-713-791-01	SCREW (M1.7X5), TAPPING, P2	
16	*3-719-683-01	LABEL, BATTERY FITTING	
17	3-713-786-41	SCREW (M2X8)	
18	*3-725-119-01	RETAINER, FPC	
19	3-669-440-00	SPRING, TENSION	

5-2. LEFT CABINET ASSEMBLY

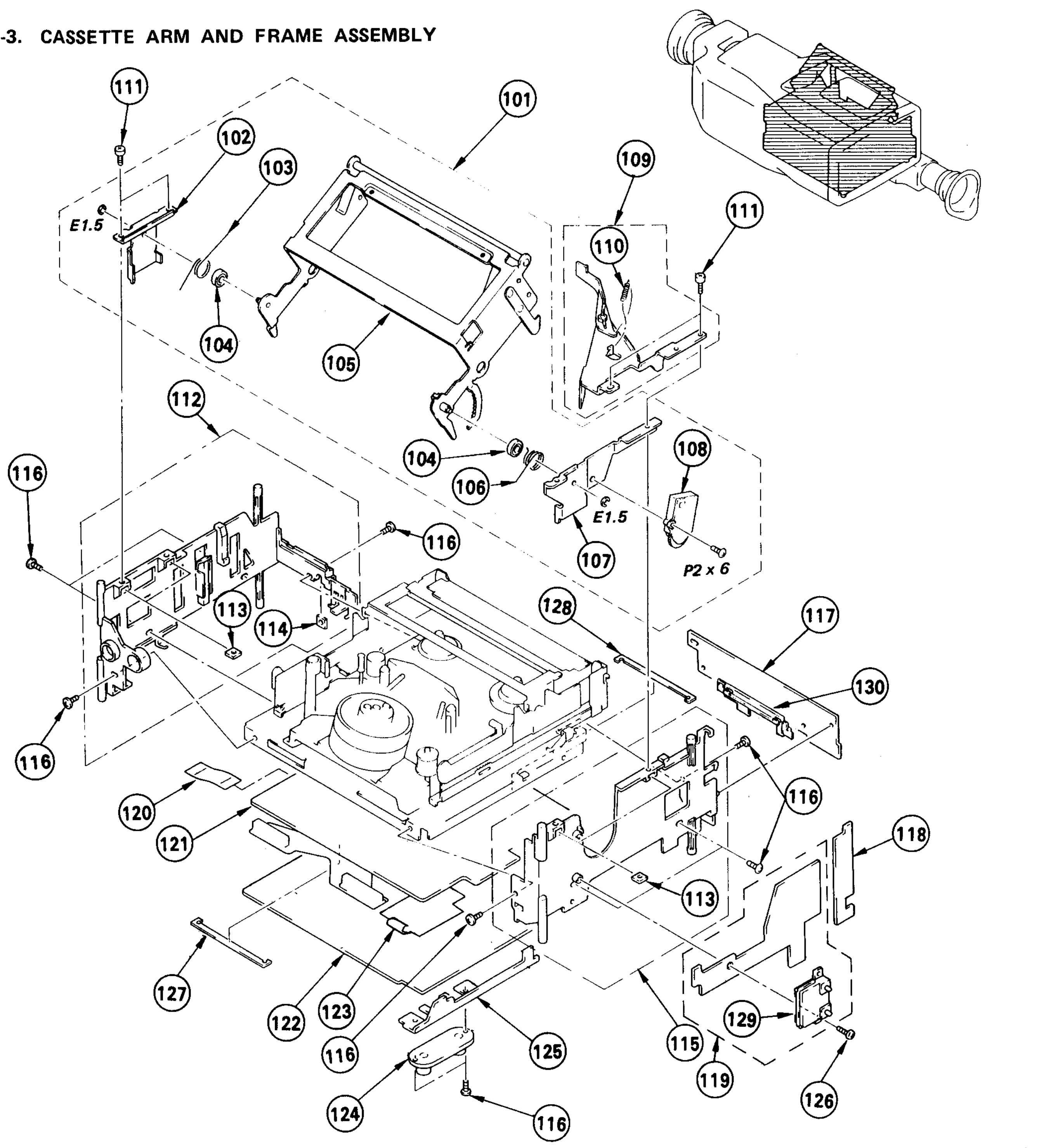
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
51	A-7019-099-A	EVF BLOCK ASSY	52-63, 85, 91
52	*A-7061-236-A	VF-13 BOARD, COMPLETE	
53	*A-7070-645-A	TL-18 BOARD, COMPLETE	
54	*A-7070-646-A	TL-19 BOARD, COMPLETE	
55	X-3724-509-2	HOLDER ASSY, CRT	
56	⚠1-451-310-21	DEFLECTION YOKE (B/W) (L951)	
57	⚠1-546-065-11	CATHODE-RAY TUBE, B/W (MOIJVV47WB)(V901)	
58	3-724-549-02	LOCK, CRT	
59	A-7080-486-A	CABINET (LOWER) ASSY, EVF	
60	A-7090-807-A	HOLDER BLOCK ASSY, FINDER	61
61	3-724-544-02	EYE CUP	
62	X-3724-508-1	CABINET (UPPER) ASSY, EVF	
63	3-719-381-01	SCREW (M2X4)	
64	A-7080-538-A	CABINET (L) BLOCK ASSY	63, 65-75, 87, 90, 92
65	3-724-511-01	SHOE, ACCESSORY	
66	3-724-512-01	SPRING	
67	3-724-513-01	PLATE, LOCK	
68	3-724-514-01	SLEEVE, EVF	
69	3-724-525-01	BRACKET (UPPER), STRAP	
70	3-724-564-01	BUTTON, LA	
71	*3-724-566-01	RETAINER, SHOE	
72	3-724-582-01	BELT, GRIP	
73	3-724-591-01	PAD, GRIP	
74	3-725-128-01	BRACKET, BELT	
75	3-713-787-01	SCREW (M2X4)	
76	3-724-542-01	HOUSING, MICROPHONE	
77	*1-625-990-21	SW-76 BOARD	
78	*1-625-989-21	LA-1 BOARD	
79	*3-724-575-01	BRACKET, LA	
80	1-542-101-11	MICROPHONE	88
81	3-724-526-01	BUTTON, ZOOM	
82	*1-625-991-21	ZM-7 BOARD	
83	3-724-527-01	BASE, ZOOM BUTTON	
84	3-713-792-01	SCREW (M2X10)	
85	3-724-570-01	RING, CRT FIXED	
86	*3-724-569-01	SHEET METAL, SP	
87	X-3724-564-1	BASE ASSY, SP	
88	X-2356-712-1	WIND SCREEN ASSY	
89	*A-7061-233-A	MC-28 BOARD, COMPLETE	
90	3-669-480-21	+ PTPWH 2	
91	*3-725-156-01	INSULATOR (B), EVF	
93	*3-725-153-01	SHEET, INSULATING, SHEET METAL	

5-3. CASSETTE ARM AND FRAME ASSEMBLY


111
102
103
E1.5
101
109
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104
105
112
116
104
106
108
E1.5
107
P2 x 6
116
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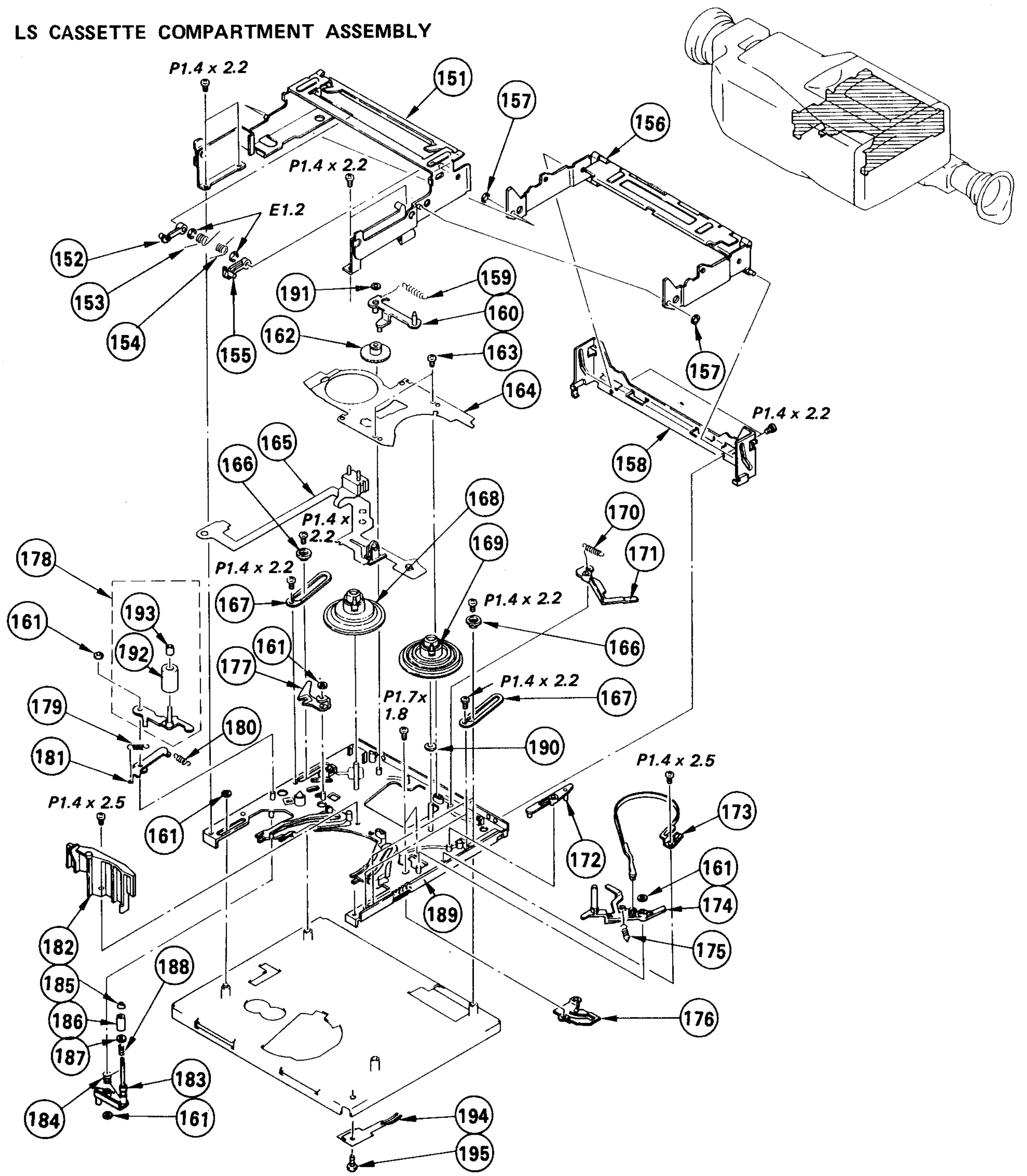
116

No.	Part No.	Description	Remark
101	A-7040-141-A	ARM BLOCK ASSY (3), CASSETTE	102-108
102	*3-719-606-01	PLATE (T2) (M), SIDE	
103	3-695-582-01	SPRING, TORSION	
104	3-695-512-02	COLLAR, CASSETTE ARM	
105	X-3712-034-4	ARM ASSY (2), CASSETTE	
106	3-695-581-01	SPRING, TORSION	
107	3-695-641-01	PLATE (S2), SIDE	
108	3-681-528-11	DAMPER	
109	A-7040-140-B	GUARD BLOCK ASSY, TAPE	110
110	3-695-718-01	SPRING, TENSION	
111	3-719-697-01	SCREW (M1.7X5), SPECIAL HEAD	
112	*X-3724-503-1	FRAME (F) ASSY, MD	113, 114
113	3-716-418-01	NUT, FRAME PLATE	
114	3-718-233-01	NUT, PLATE	
115	*X-3724-504-1	FRAME (R) ASSY, MD	113
116	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD	
117	*1-625-994-11	FV-1 BOARD	
118	*A-7070-639-A	EJ-4 BOARD, COMPLETE	
119	*A-7070-703-A	PA-13 BOARD, COMPLETE	129
120	1-559-927-21	CABLE, FLAT (1.0MM PITCH) 11P	
121	*A-7061-232-A	SS-86 BOARD, COMPLETE	128
122	*A-7061-231-A	VA-41 BOARD, COMPLETE	
123	*3-726-558-01	PLATE, SHIELD, VA-SS	
124	1-537-142-11	TERMINAL BOARD (AV OUT) (J361)	
125	*X-3724-577-1	REINFORCEMENT (B) ASSY, VA	
126	3-719-601-01	SCREW (B2X5), TAPPING	
127	*3-725-135-01	REINFORCEMENT, SS-MD	
128	*3-725-136-01	REINFORCEMENT, VA-SS	
129	1-535-658-11	TERMINAL BOARD	
130	3-724-537-01	HOLDER, FV PC BOARD	

5-4. LS CASSETTE COMPARTMENT ASSEMBLY


P1.4 x 2.2
151
157
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P1.4 x 2.2
E1.2
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153
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155
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164
P1.4 x 2.2
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166
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168
P1.4 x 2.2
170
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169
178
P1.4 x 2.2
167
P1.4 x 2.2
161
193
166
192
161
177
P1.4 x 2.2
167
P1.7x 1.8
179
180
190
181
P1.4 x 2.5
P1.4 x 2.5
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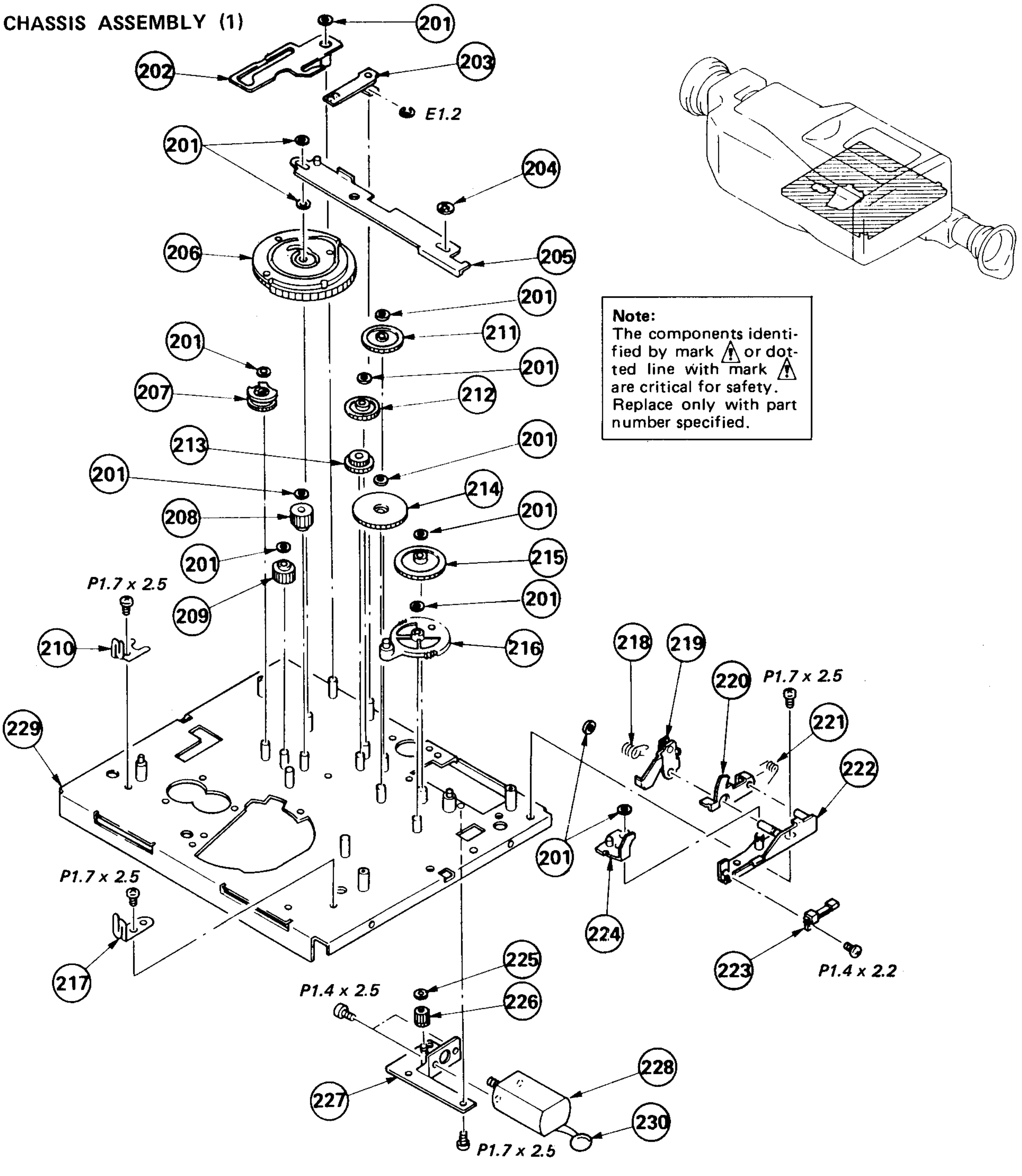
No.	Part No.	Description	Remark
151	X-3695-447-6	COMPARTMENT ASSY, CASSETTE, LS	
152	3-695-595-01	RETAINER (T), CASSETTE	
153	3-695-605-01	SPRING, TORSION	
154	3-695-604-01	SPRING, TORSION	
155	3-695-594-01	RETAINER (S), CASSETTE	
156	X-3695-448-3	ARM ASSY, BLIND	
157	3-669-465-00	WASHER (1.5), STOPPER	
158	3-695-646-01	ARM, LS	
159	3-695-718-01	SPRING, TENSION	
160	X-3712-037-1	LEVER (A) ASSY (2)	
161	3-315-384-31	WASHER, STOPPER	
162	X-3712-025-1	GEAR ASSY, TS	
163	3-699-402-01	SCREW (M1.3X5.5), TAPPING	
164	3-712-165-01	PLATE (2), STOPPER	
165	A-7060-693-A	FP-53 BOARD, COMPLETE	
166	3-695-698-01	GUIDE, LS	
167	3-695-697-01	SPRING, LEAF, LS	
168	X-3695-436-1	TABLE ASSY, REEL, TAKE-UP	
169	X-3712-038-1	TABLE ASSY (2), REEL, SUPPLY	190
170	3-542-475-00	SPRING, TENSION	
171	3-712-151-01	BRAKE (2), SOFT	
172	3-695-735-04	ARM, TG1 RELEASE	
173	X-3695-432-1	BAND ASSY, TG1	
174	X-3712-019-1	ARM ASSY (2), TG1	
175	3-695-591-01	SPRING, TENSION	
176	3-695-733-01	PLATE, CAM, LS	
177	X-3712-022-1	ARM (B) ASSY (2), PINCH	
178	X-3712-032-2	ARM (C) ASSY (2), PINCH	192, 193
179	3-695-622-01	SPRING, TENSION	
180	3-695-719-01	SPRING, TENSION	
181	X-3695-415-1	PINCH LEVER ASSY	
182	3-695-624-01	BASE, PROTECT	
183	X-3712-027-1	ARM ASSY (2), TG7	
184	3-695-541-01	SPRING	
185	3-712-158-01	FLANGE, UPPER, TG7	
186	3-712-160-01	SLEEVE (2), TG7	
187	3-712-159-01	FLANGE, LOWER, TG7	
188	3-712-157-01	SPRING, COMPRESSION	
189	X-3713-962-1	CHASSIS ASSY (2), LS	
190	3-701-444-01	WASHER, 6	
191	3-321-393-01	WASHER, STOPPER	
192	X-3695-416-1	PINCH ROLLER ASSY	
193	3-695-569-01	SLEEVE (P), PINCH INNER	
194	*3-725-151-01	PLATE, GROUND, RP	
195	3-719-695-21	SCREW (M1.7X3.5), SPECIAL HEA	

5-5. CHASSIS ASSEMBLY (1)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202
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E1.2
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213
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214
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201
215
P1.7 x 2.5
209
201
210
216
218
219
220
P1.7 x 2.5
221
229
222
201
P1.7 x 2.5
224
225
217
223
P1.4 x 2.2
P1.4 x 2.5
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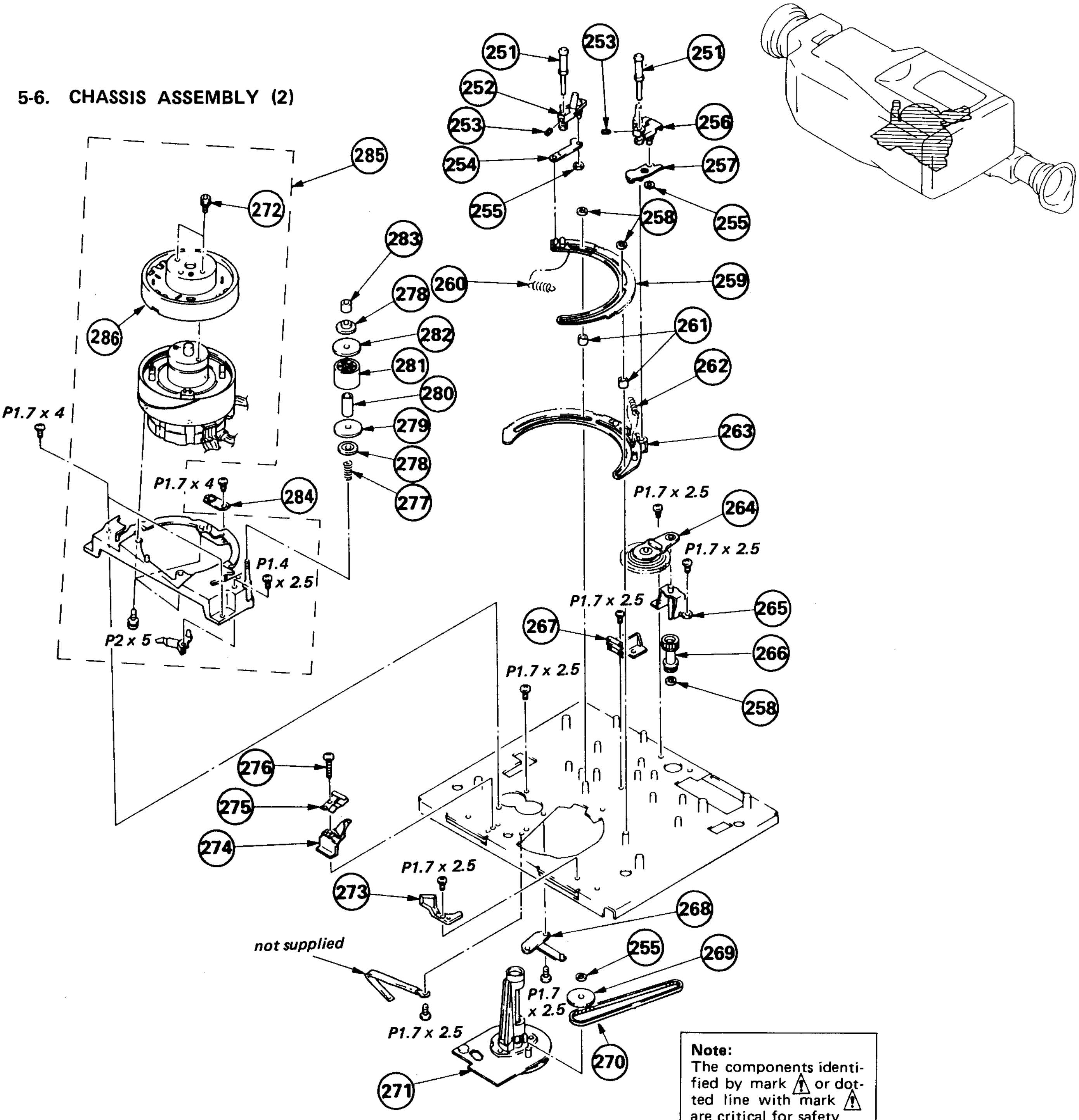
230
P1.7 x 2.5

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
201	3-315-384-31	WASHER, STOPPER	
202	X-3712-023-1	ARM (A) ASSY (2), PINCH	
203	3-695-589-01	LEVER (B), REEL LOCK	
204	3-669-465-00	WASHER (1.5), STOPPER	
205	X-3695-439-4	SLIDER ASSY, M	
206	X-3712-031-1	CAM ASSY (2)	
207	3-712-156-01	GEAR (M) (2), THREADING	
208	3-695-537-01	GEAR (T), THREADING	
209	3-695-536-01	GEAR (S), THREADING	
210	3-695-706-01	SPRING (T)	
211	3-695-559-01	GEAR (B), THREADING	
212	3-695-724-01	GEAR (D), THREADING	
213	3-712-162-02	GEAR (C) (2), THREADING	
214	3-695-714-01	GEAR (A), LS	
215	3-695-563-04	GEAR (B), LS	
216	X-3695-417-1	GEAR (C) ASSY, LS	
217	3-695-705-01	SPRING (S)	
218	3-713-937-01	SPRING (A) (2)	
219	X-3695-418-1	ARM ASSY, LOCK	
220	3-695-574-01	ARM, RETURN PREVENTION	
221	3-695-579-01	SPRING (B), TORSION	
222	X-3712-018-1	BASE ASSY (2), LOCK	
223	1-553-226-00	SWITCH, LEAF (CASSETTE DOWN) (S902)	
224	X-3695-438-1	ARM ASSY, EJECT	
225	3-321-393-01	WASHER, STOPPER	
226	3-712-150-01	WHEEL, WORM	
227	X-3712-017-1	HOLDER ASSY, MOTOR	
228	⚠1-541-508-11	MOTOR, DC (LA14-323F) (LOADING) (M903)	
229	X-3712-036-1	CHASSIS ASSY (2), MECHANICAL	
230	1-161-032-00	CAP, CERAMIC 0.01MF (C901)	

5-6. CHASSIS ASSEMBLY (2)


251
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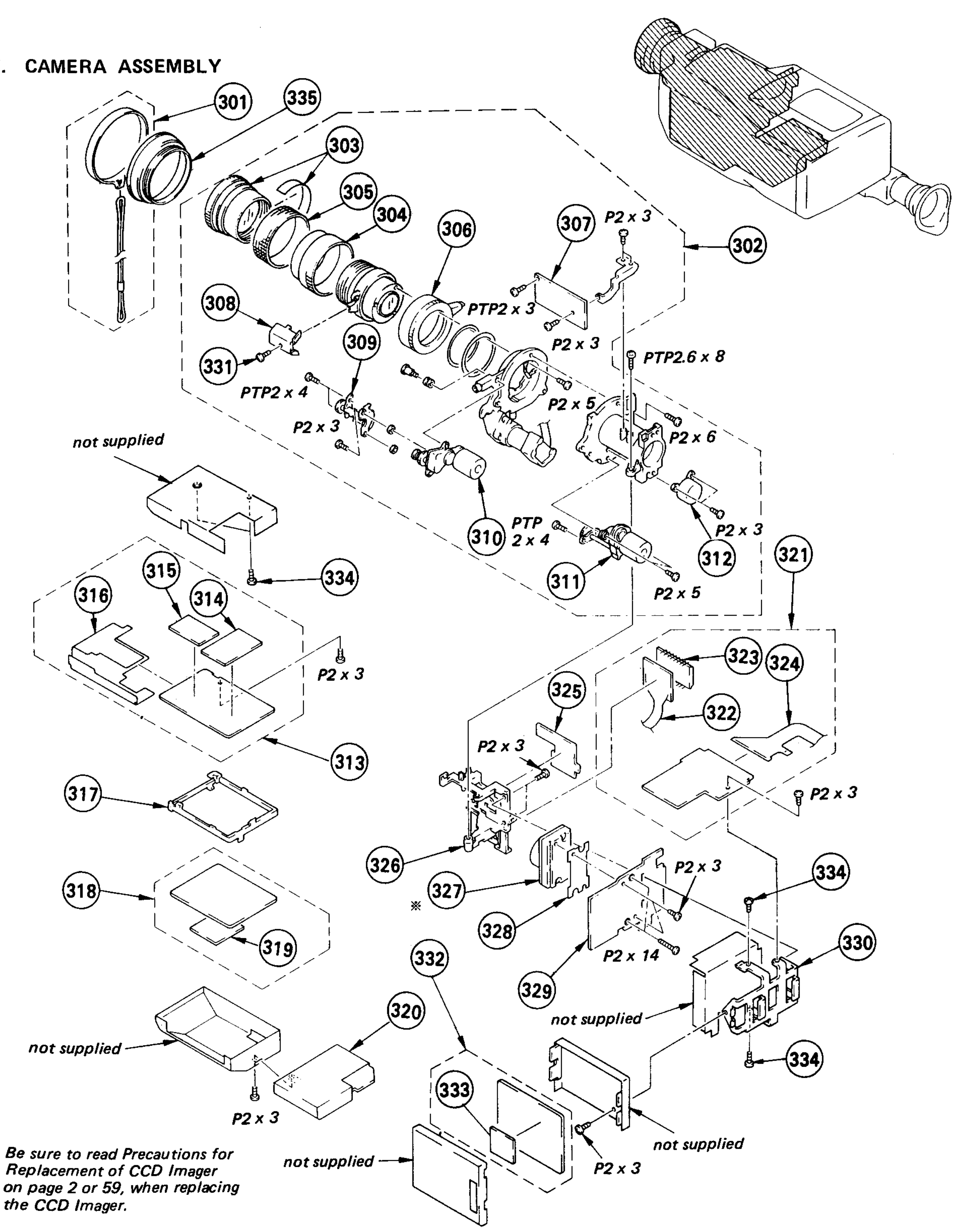
253
256
254
257
255
258
255
285
272
283
278
260
259
282
261
281
262
280
279
263
286
P1.7 x 4
278
277
P1.7 x 4
284
P1.4 x 2.5
P2 x 5
P1.7 x 2.5
264
P1.7 x 2.5
P1.7 x 2.5
265
267
266
P1.7 x 2.5
258
276
275
274
P1.7 x 2.5
273
268
not supplied
255
269
P1.7 x 2.5
P1.7 x 2.5
270
271

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description	Remark
251	X-3712-029-1	ROLLER ASSY (2), GUIDE	
252	X-3712-030-1	BASE ASSY (2), TG5	
253	3-695-770-01	SCREW, GR LOCK	
254	3-695-545-01	JOINT, T	
255	3-321-393-01	WASHER, STOPPER	
256	X-3712-028-1	BASE ASSY (2), TG4	
257	X-3695-429-1	JOINT ASSY, S	
258	3-315-384-31	WASHER, STOPPER	
259	X-3695-414-1	SLIDER (T) ASSY, THREADING	
260	3-695-773-01	SPRING, TENSION	
261	3-695-544-01	ROLLER, GUIDE	
262	3-695-772-01	SPRING, TENSION	
263	X-3695-428-1	SLIDER (S) ASSY, THREADING	
264	X-3712-024-1	ARM ASSY (2), GEAR	
265	X-3712-020-1	BASE ASSY (2), MIDWAY PULLEY	
266	X-3712-021-1	PULLEY ASSY (2), MIDWAY	
267	3-712-163-01	SUPPORT (2), SLIDER	
268	1-535-574-11	TERMINAL, SHAFT GROUND	
269	X-3695-413-1	GEAR ASSY, CHANGE	
270	3-695-637-01	BELT, RELAY	
271	8-835-309-01	MOTOR, DC BHF-3301C (CAPSTAN) (M902)	
272	3-686-403-01	SCREW (2X5), BOLT WASHER	
273	3-695-627-01	STOPPER, SLIDER, S	
274	3-695-628-01	STOPPER, SLIDER, T	
275	3-695-677-01	SPRING (T), LEAF	
276	3-695-519-01	SCREW, FITTING, LEAF SPRING(T)	
277	3-695-532-01	SPRING, COMPRESSION	
278	3-695-727-01	RETAINER, FLANGE, UPPER	
279	3-695-794-01	FLANGE, LOWER, TG2	
280	3-695-530-01	SLEEVE, TG2	
281	3-712-164-01	ROLLER (2), TG2	
282	3-695-528-01	FLANGE, TG2	
283	3-695-529-01	NUT, TG2	
284	1-807-238-11	SENSOR, DEW CONDENSATION	
285	⚠.A-7048-081-A	DRUM ASSY (DGU-19A-R)	272, 286
286	A-7049-107-A	DRUM ASSY, UPPER (DGR-19-R)	

5-7. CAMERA ASSEMBLY


301
335
303
305
304
306
307
P2 x 3
302
308
PTP2 x 3
P2 x 3
PTP2.6 x 8
331
309
PTP2 x 4
P2 x 3
P2 x 5
P2 x 6
not supplied
PTP 2 x 4
310
P2 x 3
312
321
311
P2 x 5
334
315
316
314
P2 x 3
323
324
325
322
P2 x 3
313
P2 x 3
317
326
P2 x 3
334
327
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318
328
319
P2 x 14
330
332
329
not supplied
320
not supplied
334
333
P2 x 3
not supplied
not supplied
P2 x 3

※ *Be sure to read Precautions for Replacement of CCD Imager on page 2 or 59, when replacing the CCD Imager.*

No.	Part No.	Description	Remark
301	A-7090-806-A	CAP ASSY, HOOD	
302	1-547-264-11	LENS, ZOOM (VCL-1206YK)	303-312, 331
303	A-7030-088-A	FOCUS SERVICE KIT	
304	3-707-492-01	RING, F SCALE	
305	3-707-368-01	RUBBER, FOCUS	
306	3-707-427-01	RING ASSY, ZOOM	
307	*A-7060-961-A	AF-32 BOARD, COMPLETE	
308	3-719-687-01	COVER, GEAR	
309	3-707-370-01	GEAR ASSY, AF DRIVE	
310	1-541-536-11	MOTOR, DC (GM-1673) (FOCUS) (M905)	
311	1-541-537-11	MOTOR, DC (GM-1674) (ZOOM) (M906)	
312	3-707-369-01	METER ASSY, EE (IRIS) (M904)	
313	*A-7061-227-A	VC-49 BOARD, COMPLETE	314-316
314	A-7068-056-A	DT-61 BOARD, COMPLETE (HIC)	
315	*A-7068-088-A	SH-2 BOARD, COMPLETE (HIC)	
316	1-623-012-11	FP-80 FLEXIBLE BOARD	
317	*3-724-536-01	HOLDER (A), VC PC BOARD	
318	*A-7061-228-A	VC-50 BOARD, COMPLETE	319
319	A-7060-835-A	MX-2 BOARD, COMPLETE (HIC)	
320	A-7090-800-A	DDC ASSY	
321	*A-7061-085-A	FC-18 BOARD, COMPLETE	322-324
322	1-626-232-11	FP-123 FLEXIBLE BOARD (19P)	
323	1-808-385-11	L.C.D	
324	1-626-233-11	FP-124 FLEXIBLE BOARD (34P)	
325	*A-7070-637-A	FD-6 BOARD, COMPLETE	
326	*3-724-545-01	FRAME, CAMERA	
327	8-750-010-33	IU018CK-AA (CCD IMAGER)	
328	*3-690-235-01	SHEET, INSULATING, CCD	
329	*A-7061-226-A	VC-48 BOARD, COMPLETE	
330	*3-724-577-01	JOINT	
331	3-719-845-01	SCREW (B2X4), TAPPING, P3	
332	*A-7061-229-A	VC-51 BOARD, COMPLETE	333
333	*A-7060-888-A	IA-1 BOARD, COMPLETE (HIC)	
334	3-719-601-01	SCREW (B2X5), TAPPING	
335	3-724-589-01	HOOD, LENZ	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- SEMICONDUCTORS
  In each case, U: μ, for example:
  UA. . . : μA. . . , UPA. . . : μPA. . . ,
  UPB. . . : μPB. . . , UPC. . . : μPC. . . ,
  UPD. . . : μPD. . .
- CAPACITORS
  MF: μF, PF: μμF
- COILS
  MMH: mH, UH: μH

Ref.No	Part No.	Description	Remark
	A-7060-693-A	FP-53 BOARD, COMPLETE	
		**********************	
	3-713-904-01	HOLDER (2), LED	
		DIODE	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-801-55	TLP907-0	
D304	8-719-801-55	TLP907-0	
		SWITCH	
S301	1-570-869-11	SWITCH, PUSH (2 KEY)	
		**	
	*A-7060-961-A	AF-32 BOARD, COMPLETE	
		**********************	
		CAPACITOR	
C001	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C002	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C003	1-124-464-11	ELECT 0.22MF 20% 50V	
C004	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C005	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C006	1-124-234-00	ELECT 22MF 20% 16V	
C007	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C008	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C009	1-124-120-11	ELECT 220MF 20% 16V	
C010	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
		TRANSISTOR	
Q001	8-729-103-16	TRANSISTOR 2SC1622A	
Q002	8-729-104-26	TRANSISTOR 2SB804-AW	
		RESISTOR	
R001	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R002	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R003	1-216-096-00	METAL GLAZE 91K 5% 1/10W	
R004	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R005	1-216-082-00	METAL GLAZE 24K 5% 1/10W	
R006	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R007	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R008	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R009	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R010	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R011	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R012	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R013	1-216-304-11	METAL GLAZE 3.3 5% 1/10W	
R014	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R015	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R016	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R017	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
		VARIABLE RESISTOR	
VR001	1-237-485-11	RES, ADJ, METAL FILM 220K	
VR002	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
VR003	1-237-529-11	RES, ADJ, METAL FILM 1K	
		CRYSTAL	
X001	1-567-470-11	VIBRATOR, CERAMIC	
		**	
	*A-7061-085-A	FC-18 BOARD, COMPLETE	
		**********************	
	1-626-232-11	FP-123 FLEXIBLE BOARD	
	1-808-385-11	L.C.D	
	3-725-194-01	SPACER	
	3-725-196-01	PROTECTOR, DDS	
		CAPACITOR	
C160	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C161	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C162	1-162-638-11	CERAMIC CHIP 1MF 16V	
C163	1-162-638-11	CERAMIC CHIP 1MF 16V	
C164	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C165	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C190	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C191	1-124-246-00	ELECT 6.8MF 20% 35V	
C192	1-124-246-00	ELECT 6.8MF 20% 35V	
C193	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C194	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C195	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C196	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C197	1-161-057-00	CERAMIC 0.033MF 10% 25V	
		CONNECTOR	
CN191	*1-566-181-11	PIN, CONNECTOR (PC BOARD) 2P	
CN192	1-566-535-11	CONNECTOR, FPC (ZIF) 19P	
		TRIMMER	
CT190	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30P	
		DIODE	
D160	8-719-404-12	DIODE MA159	
D161	8-719-105-73	DIODE RD4.7M-B2	
D190	8-719-105-99	DIODE RD6.2M-B1	
		IC	
IC190	8-759-142-12	IC UPD7503G-A49	
IC191	8-759-937-56	IC S-8054ALB-LM-S	
		TRANSISTOR	
Q160	8-729-905-23	TRANSISTOR 2SA1576R	
Q161	8-729-905-23	TRANSISTOR 2SA1576R	

Ref.No	Part No.	Description	Remark
Q163	8-729-905-23	TRANSISTOR 2SA1576R	
Q164	8-729-905-23	TRANSISTOR 2SA1576R	
Q165	8-729-109-42	TRANSISTOR 2SK94-X2	
Q166	8-729-905-35	TRANSISTOR 2SC4081R	
Q167	8-729-903-97	TRANSISTOR FMS1FE	
Q168	8-729-905-35	TRANSISTOR 2SC4081R	
Q169	8-729-905-18	TRANSISTOR DTC144EU	
Q190	8-729-810-24	TRANSISTOR 2SC4396	
Q191	8-729-905-23	TRANSISTOR 2SA1576R	
		RESISTOR	
R120	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R121	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R122	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R123	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R124	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R125	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R126	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R127	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R128	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R129	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R130	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R131	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R132	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R133	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R134	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R135	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R136	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R137	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R138	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R139	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R140	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R141	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R142	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R143	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R144	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R160	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R161	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R162	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R163	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R164	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R165	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R166	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R167	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R168	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R169	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R170	1-216-129-00	METAL GLAZE 2.2M 5% 1/10W	
R171	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R172	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R173	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R174	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R175	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R176	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R177	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R178	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R190	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R191	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R192	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R193	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R194	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R195	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R196	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R197	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R198	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R199	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
		SWITCH	
S191	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (T 1)	
S192	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (T 2)	
S193	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (MEMO)	
S194	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (COLOR)	
S195	1-570-870-21	SWITCH, SLIDE	
S196	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE)	
		TERMINAL	
TP190	*1-535-622-11	PIN, TERMINAL	
TP191	*1-535-622-11	PIN, TERMINAL	
		FLEXIBLE BOARD	
W190	1-626-233-11	FP-124 FLEXIBLE BOARD	
		CRYSTAL	
X190	1-527-997-21	VIBRATOR, CRYSTAL (32.768KHz)	

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Ref.No	Part No.	Description	Remark
	*A-7061-226-A	VC-48 BOARD, COMPLETE **********************	
	1-626-230-11	FP-135 FLEXIBLE BOARD	
	3-724-530-01	HOLDER, WB SENSOR	
		CAPACITOR	
C101	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C102	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C103	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C104	1-124-778-00	ELECT 22MF 20% 6.3V	
C105	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C106	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C107	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C108	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C109	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C110	1-163-115-00	CERAMIC CHIP 82PF 5% 50V	
C111	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C112	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C113	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C114	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C115	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C116	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C117	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C118	1-124-778-00	ELECT 22MF	20%	6.3V
C200	1-109-539-00	MICA 150PF	5%	100V
C201	1-130-475-00	MYLAR 0.0022MF	5%	50V
C203	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C205	1-162-638-11	CERAMIC CHIP 1MF		16V
C701	1-162-637-11	CERAMIC CHIP 0.47MF		16V
C702	1-162-637-11	CERAMIC CHIP 0.47MF		16V
C703	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C704	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C705	1-162-637-11	CERAMIC CHIP 0.47MF		16V
C706	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C707	1-162-637-11	CERAMIC CHIP 0.47MF		16V

CONNECTOR

Ref.No	Part No.	Description
CN101	1-566-527-11	CONNECTOR, FPC (ZIF) 11P
CN104	*1-566-183-11	PIN, CONNECTOR (PC BOARD) 4P
CN105	*1-564-012-00	PIN, CONNECTOR 2P
CN200	*1-566-183-11	PIN, CONNECTOR (PC BOARD) 4P
CN201	*1-566-181-11	PIN, CONNECTOR (PC BOARD) 2P

DIODE

Ref.No	Part No.	Description
D200	8-719-801-45	DIODE 1SS187

IC

Ref.No	Part No.	Description
IC101	8-752-032-48	IC CXA1157M
IC200	8-759-030-02	IC MC146805F2FPSC82534
IC201	8-759-030-16	IC MC34182M
IC202	8-759-106-23	IC UPD4066BG
IC203	8-759-100-93	IC UPC393G2
IC701	8-750-010-33	IC IUD21CK-AA

TRANSISTOR

Ref.No	Part No.	Description
Q101	8-729-100-66	TRANSISTOR 2SC1623L6
Q102	8-729-100-76	TRANSISTOR 2SA812M6
Q103	8-729-100-66	TRANSISTOR 2SC1623L6
Q104	8-729-100-76	TRANSISTOR 2SA812M6
Q105	8-729-100-66	TRANSISTOR 2SC1623L6
Q106	8-729-100-66	TRANSISTOR 2SC1623L6
Q107	8-729-100-66	TRANSISTOR 2SC1623L6
Q108	8-729-100-66	TRANSISTOR 2SC1623L6
Q109	8-729-100-66	TRANSISTOR 2SC1623L6
Q111	8-729-162-44	TRANSISTOR 2SB624BV4
Q112	8-729-100-66	TRANSISTOR 2SC1623L6
Q113	8-729-100-76	TRANSISTOR 2SA812M6
Q114	8-729-100-76	TRANSISTOR 2SA812M6
Q115	8-729-901-01	TRANSISTOR DTC144EK
Q116	8-729-902-96	TRANSISTOR FMS1
Q117	8-729-903-10	TRANSISTOR FMW1
Q200	8-729-805-39	TRANSISTOR 2SC3898
Q201	8-729-805-39	TRANSISTOR 2SC3898

Ref.No	Part No.	Description			Remark
Q202	8-729-403-07	TRANSISTOR XN1213			
Q203	8-729-403-06	TRANSISTOR XN1113			
Q204	8-729-403-06	TRANSISTOR XN1113			
Q205	8-729-805-69	TRANSISTOR 2SA1341			
Q206	8-729-403-07	TRANSISTOR XN1213			
Q207	8-729-901-01	TRANSISTOR DTC144EK			
Q701	8-729-175-73	TRANSISTOR 2SC2757T34			

RESISTOR

Ref.No	Part No.	Description			Remark
R101	1-216-091-00	METAL GLAZE 56K	1%	1/10W	
R102	1-216-091-00	METAL GLAZE 56K	1%	1/10W	
R103	1-216-748-11	METAL GLAZE 39K	5%	1/10W	
R104	1-216-071-00	METAL GLAZE 8.2K	5%	1/10W	
R105	1-216-077-00	METAL GLAZE 15K	5%	1/10W	
R106	1-216-063-00	METAL GLAZE 3.9K	5%	1/10W	
R107	1-216-295-00	METAL GLAZE 0	5%	1/10W	
R108	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	
R109	1-216-073-00	METAL GLAZE 10K	5%	1/10W	
R110	1-216-081-00	METAL GLAZE 22K	5%	1/10W	
R111	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	
R112	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	
R113	1-218-152-11	METAL GLAZE 1.5K	1%	1/10W	
R114	1-218-155-11	METAL GLAZE 3.9K	1%	1/10W	
R115	1-216-747-11	METAL GLAZE 33K	1%	1/10W	
R116	1-216-326-11	METAL GLAZE 1.8K	1%	1/10W	
R117	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R118	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R119	1-216-747-11	METAL GLAZE 33K	1%	1/10W	
R120	1-216-326-11	METAL GLAZE 1.8K	1%	1/10W	
R121	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R122	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R123	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R124	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W	
R125	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R126	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R127	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W	
R128	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R129	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W	
R130	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R131	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R132	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W	
R133	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R134	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R135	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R136	1-216-041-00	METAL GLAZE 470	5%	1/10W	
R138	1-216-166-00	METAL GLAZE 47	5%	1/8W	
R139	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R140	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R141	1-216-077-00	METAL GLAZE 15K	5%	1/10W	
R142	1-216-073-00	METAL GLAZE 10K	5%	1/10W	
R143	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R144	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R145	1-216-295-00	METAL GLAZE 0	5%	1/10W	

When indicating parts by reference number, please include the board name.

VC-48 VC-49

Ref.No	Part No.	Description				Remark
R146	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R147	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R148	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R149	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R150	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R151	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R152	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R153	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R160	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R161	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R162	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R163	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R164	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R200	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R201	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R202	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R203	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R204	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R205	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R206	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R207	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R208	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R209	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R210	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R211	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R212	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R213	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R214	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R215	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R216	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R217	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R226	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R227	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R228	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R229	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R230	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R231	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R232	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R701	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R702	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R703	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R704	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R705	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R706	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R707	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R708	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R709	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV200	1-230-524-11	RES, ADJ, METAL GLAZE 22K	

BALANCE SENSOR

Ref.No	Part No.	Description	Remark
SB200	1-807-684-11	SENSOR, WHITE BALANCE	

CRYSTAL

Ref.No	Part No.	Description	Remark
X200	1-567-152-00	OSCILLATOR, CERAMIC 4MHz	

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*A-7061-227-A VC-49 BOARD, COMPLETE
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A-7068-056-A DT-61 BOARD, COMPLETE (HIC)

*A-7068-088-A SH-2 BOARD, COMPLETE (HIC)

1-623-012-11 FP-80 FLEXIBLE BOARD

CAPACITOR

Ref.No	Part No.	Description				Remark
C708	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C709	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C710	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C721	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V	
C722	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C723	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C724	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C725	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C726	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V	
C732	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C733	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C734	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C735	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C736	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	
C737	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	
C738	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C739	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C740	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C741	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C742	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C743	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C744	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C745	1-135-100-21	TANTAL. CHIP	6.8MF	20%	6.3V	
C746	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V	
C751	1-124-229-00	ELECT	33MF	20%	10V	
C752	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V	
C753	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V	
C754	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C755	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C761	1-126-153-11	ELECT	22MF	20%	6.3V	
C762	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C763	1-131-387-00	TANTALUM	47MF	10%	6.3V	
C764	1-124-234-00	ELECT	22MF	20%	16V	
C765	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C766	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C767	1-124-234-00	ELECT 22MF 20%	16V
C768	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C769	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C770	1-124-234-00	ELECT 22MF 20%	16V
C771	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C772	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C773	1-124-234-00	ELECT 22MF 20%	16V
C774	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C775	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C776	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C777	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C778	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
		CONNECTOR	
CN701	*1-566-203-11	PIN, CONNECTOR (PC BOARD) 10P	
CN702	*1-566-196-11	PIN, CONNECTOR (PC BOARD) 3P	
		TRIMMER	
CT721	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30P	
CT731	1-141-347-11	CAP, VAR, TRIMMER (CHIP) 10P	
		DIODE	
D701	8-719-801-45	DIODE 1SS187	
D731	8-713-200-00	DIODE 1T32-L2	
		IC	
IC731	8-752-321-16	IC CXD1030M	
		COIL	
L731	1-410-389-11	INDUCTOR CHIP 47UH	
L761	1-408-978-21	INDUCTOR 47UH	
L762	1-408-960-21	INDUCTOR 1.5UH	
L763	1-408-960-21	INDUCTOR 1.5UH	
L764	1-408-978-21	INDUCTOR 47UH	
		TRANSISTOR	
Q721	8-729-175-73	TRANSISTOR 2SC2757T34	
Q722	8-729-175-73	TRANSISTOR 2SC2757T34	
Q731	8-729-100-76	TRANSISTOR 2SA812M6	
Q732	8-729-100-66	TRANSISTOR 2SC1623L6	
		RESISTOR	
R721	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R722	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R723	1-216-039-00	METAL GLAZE 390 5%	1/10W
R724	1-216-039-00	METAL GLAZE 390 5%	1/10W
R725	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R726	1-216-041-00	METAL GLAZE 470 5%	1/10W
R727	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R732	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R733	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R734	1-216-068-00	METAL GLAZE 6.2K 5%	1/10W
R735	1-216-077-00	METAL GLAZE 15K 5%	1/10W

Ref.No	Part No.	Description	Remark
R736	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R737	1-249-422-11	CARBON(SMALL) 2.7K 5%	1/32W
R738	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R739	1-216-295-00	METAL GLAZE 0 5%	1/10W
R740	1-216-025-00	METAL GLAZE 100 5%	1/10W
R741	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R742	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R743	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R744	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R745	1-216-033-00	METAL GLAZE 220 5%	1/10W
R746	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R747	1-216-033-00	METAL GLAZE 220 5%	1/10W
R751	1-216-025-00	METAL GLAZE 100 5%	1/10W
R752	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R754	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R755	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
		CRYSTAL	
X721	1-567-732-12	VIBRATOR, CRYSTAL (28.3750MHz)	
X731	1-567-733-11	VIBRATOR, CRYSTAL (17.7MHz)	

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*A-7061-228-A VC-50 BOARD, COMPLETE

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A-7060-835-A MX-2 BOARD, COMPLETE (HIC)

Ref.No	Part No.	Description	Remark
		CAPACITOR	
C781	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C782	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C786	1-124-234-00	ELECT 22MF 20%	10V
C787	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C788	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C789	1-124-584-00	ELECT 100MF 20%	10V
C790	1-126-207-11	ELECT 33MF 20%	4V
C791	1-126-207-11	ELECT 33MF 20%	4V
		CONNECTOR	
CN781	*1-566-197-11	PIN, CONNECTOR (PC BOARD) 4P	
		FILTER	
FL781	1-235-442-11	FILTER, LOW PASS (YH)	
		IC	
IC781	8-759-914-44	IC TL431CLPB	
		COIL	
L781	1-408-767-21	INDUCTOR CHIP 1.5UH	
L785	1-410-369-11	INDUCTOR CHIP 1UH	
L786	1-408-785-21	INDUCTOR CHIP 47UH	
L787	1-408-777-00	INDUCTOR CHIP 10UH	

When indicating parts by reference number, please include the board name.

VC-50 VC-51

RESISTOR

Ref.No	Part No.	Description	Remark
R781	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R782	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R783	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R784	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R785	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R786	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R787	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R788	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R789	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R790	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R792	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R793	1-216-066-00	METAL GLAZE 5.1K 5% 1/10W	
R794	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R795	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R796	1-216-083-00	METAL GLAZE 27K 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV781	1-230-523-11	RES, ADJ, METAL GLAZE 10K	
RV782	1-230-523-11	RES, ADJ, METAL GLAZE 10K	

TERMINAL

Ref.No	Part No.	Description	Remark
TP792	*1-535-622-11	PIN, TERMINAL	

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*A-7061-229-A VC-51 BOARD, COMPLETE
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*A-7060-888-A IA-1 BOARD, COMPLETE (HIC)

CAPACITOR

Ref.No	Part No.	Description	Remark
C801	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C802	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C803	1-163-013-00	CERAMIC CHIP 0.0022MF 10%	50V
C804	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C805	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C806	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C807	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C808	1-126-198-11	ELECT 4.7MF 20%	35V
C809	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C810	1-124-779-00	ELECT 10MF 20%	16V
C811	1-162-638-11	CERAMIC CHIP 1MF	16V
C812	1-124-778-00	ELECT 22MF 20%	6.3V
C813	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C814	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
C815	1-135-093-21	TANTAL. CHIP 10MF 20%	10V
C816	1-124-779-00	ELECT 10MF 20%	16V
C817	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C861	1-135-092-21	TANTAL. CHIP 3.3MF 20%	16V
C862	1-124-225-00	ELECT 100MF 20%	6.3V
C863	1-163-081-00	CERAMIC CHIP 0.22MF	25V
C881	1-135-101-21	TANTAL. CHIP 22MF 20%	6.3V
C882	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C883	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C884	1-124-225-00	ELECT 100MF 20%	6.3V
C892	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C893	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C894	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN861	1-564-003-00	PIN, CONNECTOR 4P	
CN881	*1-564-004-00	PIN, CONNECTOR 5P	

DIODE

Ref.No	Part No.	Description	Remark
D801	8-719-801-45	DIODE 1SS187	
D802	8-719-100-05	DIODE 1S2837	
D861	8-719-100-05	DIODE 1S2837	

DELAY LINE

Ref.No	Part No.	Description	Remark
DL801	1-415-448-21	DELAY LINE	

IC

Ref.No	Part No.	Description	Remark
IC801	8-759-908-11	IC CX20055	

COIL

Ref.No	Part No.	Description	Remark
L801	1-408-785-21	INDUCTOR CHIP 47UH	
L881	1-408-978-21	INDUCTOR 47UH	
L882	1-410-369-11	INDUCTOR CHIP 1UH	
L883	1-410-369-11	INDUCTOR CHIP 1UH	
L884	1-410-369-11	INDUCTOR CHIP 1UH	
L885	1-410-369-11	INDUCTOR CHIP 1UH	
L886	1-410-369-11	INDUCTOR CHIP 1UH	
L887	1-410-369-11	INDUCTOR CHIP 1UH	
L888	1-410-369-11	INDUCTOR CHIP 1UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q801	8-729-100-66	TRANSISTOR 2SC1623L6	
Q802	8-729-100-66	TRANSISTOR 2SC1623L6	
Q803	8-729-100-66	TRANSISTOR 2SC1623L6	
Q804	8-729-100-76	TRANSISTOR 2SA812M6	
Q805	8-729-100-76	TRANSISTOR 2SA812M6	
Q806	8-729-100-66	TRANSISTOR 2SC1623L6	
Q807	8-729-100-66	TRANSISTOR 2SC1623L6	
Q808	8-729-100-66	TRANSISTOR 2SC1623L6	
Q809	8-729-100-66	TRANSISTOR 2SC1623L6	
Q861	8-729-805-43	TRANSISTOR 2SC3396	

RESISTOR

Ref.No	Part No.	Description	Remark
R801	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R802	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R803	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R804	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R805	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R806	1-216-083-00	METAL GLAZE 27K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R807	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R808	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R809	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R810	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R811	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R812	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R813	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R814	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R815	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R816	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R817	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R818	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R819	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R820	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R821	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R822	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R823	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R824	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R825	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R826	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R827	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R828	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R829	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R830	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R831	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R832	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R833	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R834	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R836	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R837	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R838	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R839	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R861	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R862	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R863	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R864	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R867	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R868	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R890	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R891	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R892	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
		VARIABLE RESISTOR	
RV801	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV802	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV803	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV804	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV805	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV806	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV807	1-230-867-11	RES, ADJ, METAL GRAZE 1K	
RV808	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV809	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV810	1-230-870-11	RES, ADJ, METAL GRAZE 10K	

Ref.No	Part No.	Description	Remark
		TERMINAL	
TP804	*1-535-622-11	PIN, TERMINAL	
TP861	*1-535-622-11	PIN, TERMINAL	
**			
	*A-7061-232-A	SS-86 BOARD, COMPLETE **********************	
	*3-718-223-01	HOLDER, TE	
	*3-725-136-01	REINFORCEMENT, VA-SS	
		CAPACITOR	
C001	1-126-204-11	ELECT 47MF 20% 16V	
C002	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C003	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C004	1-126-198-11	ELECT 4.7MF 20% 35V	
C006	1-124-779-00	ELECT 10MF 20% 16V	
C007	1-124-779-00	ELECT 10MF 20% 16V	
C008	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C009	1-126-206-11	ELECT 100MF 20% 6.3V	
C010	1-162-638-11	CERAMIC CHIP 1MF 16V	
C011	1-162-638-11	CERAMIC CHIP 1MF 16V	
C012	1-124-778-00	ELECT 22MF 20% 6.3V	
C013	1-161-057-00	CERAMIC 0.033MF 10% 50V	
C014	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C017	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C051	1-163-077-00	CERAMIC CHIP 0.1MF 10% 25V	
C052	1-163-077-00	CERAMIC CHIP 0.1MF 10% 25V	
C053	1-163-077-00	CERAMIC CHIP 0.1MF 10% 25V	
C054	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C055	1-124-577-11	ELECT 82MF 20% 10V	
C056	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C057	1-124-577-11	ELECT 82MF 20% 10V	
C058	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C059	1-124-577-11	ELECT 82MF 20% 10V	
C060	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C061	1-126-204-11	ELECT 47MF 20% 16V	
C062	1-162-638-11	CERAMIC CHIP 1MF 16V	
C063	1-135-099-00	TANTAL. CHIP 2.2MF 20% 6.3V	
C064	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C065	1-127-506-00	ELECT(SOLID) 1MF 20% 25V	
C066	1-162-638-11	CERAMIC CHIP 1MF 16V	
C067	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C068	1-126-196-11	ELECT 3.3MF 20% 50V	
C069	1-124-779-00	ELECT 10MF 20% 16V	
C070	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C071	1-124-779-00	ELECT 10MF 20% 16V	
C072	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C073	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C074	1-124-779-00	ELECT 10MF 20% 16V	
C075	1-124-779-00	ELECT 10MF 20% 16V	
C076	1-163-038-00	CERAMIC CHIP 0.1MF 25V	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description			Remark
C080	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C081	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C082	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C083	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C084	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C085	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C086	1-136-017-00	CERAMIC CHIP	0.0047MF		50V
C087	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C088	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C089	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C200	1-124-779-00	ELECT	10MF	20%	16V
C201	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C202	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C204	1-124-779-00	ELECT	10MF	20%	16V
C205	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C206	1-124-779-00	ELECT	10MF	20%	16V
C207	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C209	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C210	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C211	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C212	1-124-779-00	ELECT	10MF	20%	16V
C213	1-124-778-00	ELECT	22MF	20%	6.3V
C215	1-135-145-11	TANTAL. CHIP	0.47MF	20%	25V
C216	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C217	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C218	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V
C301	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C302	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C303	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C304	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C305	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C308	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C309	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C310	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C311	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C312	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C313	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C314	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C315	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C316	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C317	1-124-778-00	ELECT	22MF	20%	6.3V
C318	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C319	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C320	1-124-778-00	ELECT	22MF	20%	6.3V
C321	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C322	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C323	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C324	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C325	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C326	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C327	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C328	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V

Ref.No	Part No.	Description			Remark
C329	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C330	1-124-778-00	ELECT	22MF	20%	6.3V
C332	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C345	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C346	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C347	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C348	1-124-778-00	ELECT	22MF	20%	6.3V
C349	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C350	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C351	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C353	1-124-778-00	ELECT	22MF	20%	6.3V

CONNECTOR

Ref.No	Part No.	Description
CN001	*1-564-014-00	PIN, CONNECTOR 4P
CN002	*1-564-014-00	PIN, CONNECTOR 4P
CN003	1-566-529-11	CONNECTOR, FPC (ZIF) 13P
CN004	*1-566-540-11	CONNECTOR, FPC (NON ZIF) 8P
CN005	*1-565-532-11	PIN, CONNECTOR (PC BOARD) 7P
CN006	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P
CN007	1-566-536-11	CONNECTOR, FPC (ZIF) 20P

TRIMMER

Ref.No	Part No.	Description
CT200	1-141-331-11	CAP, VAR, TRIMMER (CHIP)

DIODE

Ref.No	Part No.	Description
D003	8-719-404-12	DIODE MA159
D004	8-719-404-12	DIODE MA159
D050	8-719-938-75	DIODE SB05-05CP
D051	8-719-938-75	DIODE SB05-05CP
D200	8-719-100-03	DIODE 1S2835
D201	8-719-404-12	DIODE MA159
D203	8-713-300-88	DIODE 1T33C-01

IC

Ref.No	Part No.	Description
IC001	8-759-141-79	IC UPD78112GF-509-3BE
IC002	8-759-100-94	IC UPC358G2
IC003	8-759-804-72	IC LB1631M
IC004	8-759-202-45	IC CX20114
IC005	8-759-940-79	IC S-81350AG
IC006	8-759-107-68	IC CX20115A
IC007	8-759-805-06	IC CXA1127M
IC200	8-759-141-56	IC UPD7507HG-532-22
IC201	8-752-326-28	IC CXK58257M-10LL
IC202	8-759-972-39	IC MB670493
IC203	8-759-101-12	IC UPC311G2
IC301	8-752-033-84	IC CXA1202R

COIL

Ref.No	Part No.	Description
L001	1-410-381-11	INDUCTOR CHIP 10UH
L002	1-410-381-11	INDUCTOR CHIP 10UH
L050	1-421-983-11	COIL, CHOKE 700UH
L051	1-421-983-11	COIL, CHOKE 700UH

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
L052	1-410-627-11	COIL, CHOKE 100UH	
L053	1-410-389-11	INDUCTOR CHIP 47UH	
L200	1-410-377-11	INDUCTOR CHIP 4.7UH	
L201	1-410-377-11	INDUCTOR CHIP 4.7UH	
L202	1-410-377-11	INDUCTOR CHIP 4.7UH	
L203	1-410-377-11	INDUCTOR CHIP 4.7UH	
L204	1-410-384-11	INDUCTOR CHIP 18UH	
L301	1-408-777-00	INDUCTOR CHIP 10UH	
L302	1-408-793-21	INDUCTOR CHIP 220UH	
L303	1-412-029-11	INDUCTOR CHIP 10UH	
L307	1-412-033-11	INDUCTOR CHIP 220UH	
L308	1-412-033-11	INDUCTOR CHIP 220UH	
		TRANSISTOR	
PH001	8-729-905-07	PT480FI	
PH002	8-729-905-07	PT480FI	
		TRANSISTOR	
Q001	8-729-808-18	TRANSISTOR 2SB926-T	
Q002	8-729-905-35	TRANSISTOR 2SC4081R	
Q005	8-729-903-10	TRANSISTOR FMW1	
Q006	8-729-903-10	TRANSISTOR FMW1	
Q007	8-729-905-45	TRANSISTOR DTA143EU	
Q008	8-729-905-23	TRANSISTOR 2SA1576R	
Q051	8-729-805-25	TRANSISTOR 2SB1121	
Q052	8-729-805-25	TRANSISTOR 2SB1121	
Q053	8-729-904-07	TRANSISTOR FMG2	
Q054	8-729-905-23	TRANSISTOR 2SA1576R	
Q055	8-729-810-19	TRANSISTOR 2SC4396	
Q070	8-729-903-97	TRANSISTOR FMS1FE	
Q071	8-729-904-07	TRANSISTOR FMG2	
Q073	8-729-905-45	TRANSISTOR DTA143EU	
Q074	8-729-810-19	TRANSISTOR 2SC4396	
Q075	8-729-810-10	TRANSISTOR 2SA1676	
Q076	8-729-810-19	TRANSISTOR 2SC4396	
Q078	8-729-810-10	TRANSISTOR 2SA1676	
Q079	8-729-810-13	TRANSISTOR 2SA1677	
Q080	8-729-805-25	TRANSISTOR 2SB1121	
Q081	8-729-805-25	TRANSISTOR 2SB1121	
Q201	8-729-905-23	TRANSISTOR 2SA1576R	
Q202	8-729-905-35	TRANSISTOR 2SC4081R	
Q203	8-729-810-19	TRANSISTOR 2SC4396	
Q204	8-729-810-19	TRANSISTOR 2SC4396	
Q205	8-729-810-19	TRANSISTOR 2SC4396	
Q206	8-729-810-19	TRANSISTOR 2SC4396	
Q302	8-729-117-54	TRANSISTOR 2SA1175	
Q303	8-729-100-76	TRANSISTOR 2SA812M6	
Q304	8-729-810-10	TRANSISTOR 2SA1676	
Q305	8-729-810-10	TRANSISTOR 2SA1676	
Q307	8-729-810-19	TRANSISTOR 2SC4396	
Q317	8-729-905-35	TRANSISTOR 2SC4081R	
Q318	8-729-905-35	TRANSISTOR 2SC4081R	

Ref.No	Part No.	Description	Remark
Q319	8-729-810-10	TRANSISTOR 2SA1676	
Q320	8-729-905-35	TRANSISTOR 2SC4081R	
		RESISTOR	
R001	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R002	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R003	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R004	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R005	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R006	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R007	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R008	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R010	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R011	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R012	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R013	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R014	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R015	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R016	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R017	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R018	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R019	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R020	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R021	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R022	1-216-172-00	METAL GLAZE 82 5% 1/8W	
R025	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R026	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R027	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R028	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R029	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R030	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R031	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R032	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R033	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R034	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R038	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R040	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R045	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R050	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R051	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R052	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R053	1-216-298-00	METAL GLAZE 2.2 5% 1/10W	
R054	1-216-298-00	METAL GLAZE 2.2 5% 1/10W	
R055	1-216-298-00	METAL GLAZE 2.2 5% 1/10W	
R056	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R057	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R058	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R059	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R060	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R061	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R062	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R063	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R064	1-216-085-00	METAL GLAZE 33K 5% 1/10W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R065	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R066	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R067	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R068	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R069	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R070	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R071	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R072	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R073	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R074	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R075	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R076	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R077	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R078	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R079	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R080	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R081	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R082	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R083	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R084	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R085	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R086	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R087	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R090	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R091	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R092	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R093	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R094	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R095	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R096	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R097	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R098	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R100	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R101	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R102	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R103	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R104	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R108	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R109	1-216-136-00	METAL GLAZE	2.7	5%	1/8W	
R110	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R111	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R112	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R200	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R201	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R202	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R203	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R204	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R205	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R206	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R207	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R208	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R209	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R210	1-216-295-00	METAL GLAZE	0	5%	1/10W	

Ref.No	Part No.	Description				Remark
R211	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R212	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R213	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R214	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R215	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R216	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R217	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R229	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R230	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R231	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R233	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R234	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R236	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R237	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R238	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R240	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R241	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R242	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R243	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R244	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R245	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R246	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R247	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R248	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R249	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R304	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R305	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R306	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R307	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R308	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R309	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R311	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R312	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R313	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R314	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R315	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R316	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R318	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R319	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R320	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R322	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R323	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R324	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R325	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R326	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R327	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R328	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R329	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R331	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R332	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R334	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R335	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R336	1-216-081-00	METAL GLAZE	22K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
R337	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R338	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R339	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R340	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R341	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R357	1-216-035-00	METAL GLAZE	270	5%	1/10W
R358	1-216-041-00	METAL GLAZE	470	5%	1/10W

VARIABLE RESISTOR

RV001	1-230-873-11	RES, ADJ, METAL GRAZE 47K
RV002	1-230-874-11	RES, ADJ, METAL GRAZE 100K
RV003	1-230-874-11	RES, ADJ, METAL GRAZE 100K
RV200	1-230-867-11	RES, ADJ, METAL GRAZE 1K
RV301	1-230-873-11	RES, ADJ, METAL GRAZE 47K
RV302	1-230-873-11	RES, ADJ, METAL GRAZE 47K

TERMINAL PIN

TP001	*1-535-622-11	PIN, TERMINAL
TP002	*1-535-622-11	PIN, TERMINAL
TP003	*1-535-622-11	PIN, TERMINAL
TP004	*1-535-622-11	PIN, TERMINAL

CRYSTAL

X001	1-567-885-11	VIBRATOR, CRYSTAL 12MHz
X200	1-567-152-00	OSCILLATOR, CERAMIC

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*A-7061-231-A VA-41 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description			Remark
C251	1-162-638-11	CERAMIC CHIP	1MF		16V
C252	1-162-638-11	CERAMIC CHIP	1MF		16V
C253	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C254	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C255	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C256	1-124-779-00	ELECT	10MF	20%	16V
C257	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C258	1-124-779-00	ELECT	10MF	20%	16V
C259	1-162-638-11	CERAMIC CHIP	1MF		16V
C260	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C261	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C262	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C263	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C264	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C265	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C266	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C267	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C268	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C269	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C270	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C271	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C272	1-162-638-11	CERAMIC CHIP	1MF		16V
C273	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C274	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C275	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C276	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C277	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C278	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C280	1-124-279-11	ELECT	3.3MF	20%	25V
C360	1-162-638-11	CERAMIC CHIP	1MF		16V
C361	1-126-187-21	ELECT	0.1MF	20%	50V
C362	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C363	1-126-199-21	ELECT	6.8MF	20%	35V
C364	1-124-779-00	ELECT	10MF	20%	16V
C365	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C366	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C367	1-124-779-00	ELECT	10MF	20%	16V
C368	1-162-638-11	CERAMIC CHIP	1MF		16V
C369	1-162-638-11	CERAMIC CHIP	1MF		16V
C370	1-124-779-00	ELECT	10MF	20%	16V
C371	1-162-638-11	CERAMIC CHIP	1MF		16V
C372	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C373	1-124-778-00	ELECT	22MF	20%	6.3V
C374	1-126-193-11	ELECT	1MF	20%	50V
C375	1-162-638-11	CERAMIC CHIP	1MF		16V
C376	1-126-193-11	ELECT	1MF	20%	50V
C377	1-126-193-11	ELECT	1MF	20%	50V
C378	1-124-779-00	ELECT	10MF	20%	16V
C379	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C380	1-124-779-00	ELECT	10MF	20%	16V
C381	1-124-779-00	ELECT	10MF	20%	16V
C382	1-124-779-00	ELECT	10MF	20%	16V
C383	1-124-779-00	ELECT	10MF	20%	16V
C384	1-124-779-00	ELECT	10MF	20%	16V
C385	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C386	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C387	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C388	1-124-778-00	ELECT	22MF	20%	6.3V
C389	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C390	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C391	1-124-779-00	ELECT	10MF	20%	16V
C392	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C393	1-124-778-00	ELECT	22MF	20%	6.3V
C394	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C395	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C396	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C397	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C398	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C399	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C401	1-124-779-00	ELECT	10MF	20%	16V
C402	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C403	1-124-778-00	ELECT	22MF	20%	6.3V
C404	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C405	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description		Remark
C406	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C407	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C408	1-163-091-00	CERAMIC CHIP 8PF	0.25PF	50V
C409	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C410	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C411	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C412	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C413	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C414	1-162-638-11	CERAMIC CHIP 1MF		16V
C415	1-126-205-11	ELECT 47MF	20%	6.3V
C416	1-135-145-11	TANTAL. CHIP 0.47MF	20%	35V
C417	1-135-145-11	TANTAL. CHIP 0.47MF	20%	35V
C418	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C419	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C420	1-163-114-00	CERAMIC CHIP 75PF	5%	50V
C421	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C422	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C423	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C424	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C425	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C426	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C427	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C428	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C429	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C430	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C431	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C432	1-124-779-00	ELECT 10MF	20%	16V
C433	1-124-779-00	ELECT 10MF	20%	16V
C434	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C435	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C436	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C437	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C438	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C439	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C440	1-163-127-00	CERAMIC CHIP 270PF	5%	50V
C441	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C442	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C443	1-163-088-00	CERAMIC CHIP 5PF	0.25PF	50V
C444	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C445	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C446	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C447	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C448	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C449	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C450	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C451	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C452	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C453	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C454	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C455	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C456	1-124-778-00	ELECT 22MF	20%	6.3V
C457	1-163-118-00	CERAMIC CHIP 110PF	5%	50V
C458	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C459	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C460	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C461	1-126-198-11	ELECT 4.7MF	20%	35V
C462	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C463	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C464	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C465	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C466	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C467	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C468	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C469	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C470	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C471	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C472	1-163-086-00	CERAMIC CHIP 3PF	0.25PF	50V
C473	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C474	1-124-779-00	ELECT 10MF	20%	16V
C475	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C476	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C477	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C478	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C479	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C480	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C481	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C482	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C483	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C484	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C485	1-124-779-00	ELECT 10MF	20%	16V
C488	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C489	1-124-778-00	ELECT 22MF	20%	6.3V
C490	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C491	1-124-779-00	ELECT 10MF	20%	16V
C492	1-126-191-11	ELECT 0.47MF	20%	50V
C493	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C494	1-124-779-00	ELECT 10MF	20%	16V
C495	1-124-779-00	ELECT 10MF	20%	16V
C496	1-126-246-11	ELECT 220MF	20%	4V
C497	1-124-778-00	ELECT 22MF	20%	6.3V
C498	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C499	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C500	1-126-208-11	ELECT 47MF	20%	4V
C501	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C502	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C503	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C504	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C505	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C506	1-124-778-00	ELECT 22MF	20%	6.3V
C507	1-126-193-11	ELECT 1MF	20%	50V
C508	1-126-205-11	ELECT 47MF	20%	6.3V
C509	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C510	1-124-779-00	ELECT 10MF	20%	16V
C511	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C512	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C513	1-163-105-00	CERAMIC CHIP 33PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C514	1-124-779-00	ELECT 10MF 20%	16V
C515	1-162-638-11	CERAMIC CHIP 1MF	16V
C516	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C517	1-135-146-21	TANTAL. CHIP 0.68MF 20%	25V
C518	1-126-195-11	ELECT 2.2MF 20%	50V
C519	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C520	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C521	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C524	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C525	1-163-123-00	CERAMIC CHIP 180PF 5%	50V
C526	1-163-081-00	CERAMIC CHIP 0.22MF	25V
C527	1-163-099-00	CERAMIC CHIP 18PF 5%	50V
C528	1-163-034-00	CERAMIC CHIP 0.033MF	50V
C530	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C531	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C580	1-163-019-00	CERAMIC CHIP 0.0068MF 10%	50V
C581	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C582	1-126-209-11	ELECT 100MF 20%	4V
C584	1-163-141-00	CERAMIC CHIP 0.001MF 5%	50V
C585	1-135-091-00	TANTAL. CHIP 1MF 20%	16V
C586	1-126-207-11	ELECT 33MF 20%	4V
C587	1-126-207-11	ELECT 33MF 20%	4V
C588	1-135-091-00	TANTAL. CHIP 1MF 20%	16V
C589	1-163-141-00	CERAMIC CHIP 0.001MF 10%	50V
C590	1-126-205-11	ELECT 47MF 20%	6.3V
C591	1-135-151-21	TANTAL. CHIP 4.7MF 20%	4V
C592	1-163-036-00	CERAMIC CHIP 0.068MF	50V
C593	1-126-206-11	ELECT 100MF 20%	6.3V
C594	1-126-206-11	ELECT 100MF 20%	6.3V
C595	1-135-151-21	TANTAL. CHIP 4.7MF 20%	4V
C598	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C600	1-163-145-00	CERAMIC CHIP 0.0015MF 10%	50V
C601	1-163-033-00	CERAMIC CHIP 0.022MF	50V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN360	*1-565-543-11	PIN, CONNECTOR (PC BOARD) 4P	
CN361	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	

TRIMMER

Ref.No	Part No.	Description	Remark
CV360	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30P	
CV361	1-141-311-11	CAP, VAR, TRIMMER (CHIP) 20P	

DIODE

Ref.No	Part No.	Description	Remark
D361	8-719-100-05	DIODE 1S2837	
D362	8-719-101-23	DIODE 1SS123	
D363	8-719-101-23	DIODE 1SS123	
D364	8-719-100-05	DIODE 1S2837	
D365	8-719-101-23	DIODE 1SS123	
D366	8-719-106-43	DIODE RD9.1M-B1	
D367	8-719-106-43	DIODE RD9.1M-B1	
D368	8-719-106-43	DIODE RD9.1M-B1	
D369	8-719-106-43	DIODE RD9.1M-B1	
D370	8-719-106-43	DIODE RD9.1M-B1	
D372	8-719-100-05	DIODE 1S2837	

DELAY LINE

Ref.No	Part No.	Description	Remark
DL360	1-415-593-11	DELAY LINE, ULTRASONIC GLASS	

FILTER

Ref.No	Part No.	Description	Remark
FL361	1-577-162-11	FILTER, CERAMIC (5.17MHz)	
FL362	1-236-186-11	FILTER, BAND PASS	
FL363	1-409-446-11	FILTER, TRAP	
FL365	1-236-188-11	FILTER, BAND PASS	
FL580	1-236-145-11	FILTER, BAND PASS	

IC

Ref.No	Part No.	Description	Remark
IC250	8-759-209-53	IC CXA1204Q	
IC360	8-752-034-39	IC CXA1200AQ	
IC360	8-752-034-40	IC CXA1200BQ	
IC361	8-752-327-03	IC CXL1502M	
IC362	8-752-033-40	IC CXA1201Q	
IC363	8-752-033-74	IC CXA1203N	
IC364	8-759-710-09	IC NJM2233AM	
IC365	8-759-710-09	IC NJM2233AM	
IC366	8-759-100-93	IC UPC393G2	
IC367	8-759-204-51	IC TC40H008F	
IC368	8-759-112-72	IC UPD6142G-101	
IC580	8-741-150-51	IC SBX1505-21	

COIL

Ref.No	Part No.	Description	Remark
L250	1-408-789-21	INDUCTOR CHIP 100UH	
L251	1-408-795-21	INDUCTOR CHIP 330UH	
L252	1-410-393-11	INDUCTOR CHIP 100UH	
L361	1-410-393-11	INDUCTOR CHIP 100UH	
L362	1-412-031-11	INDUCTOR CHIP 47UH	
L363	1-412-031-11	INDUCTOR CHIP 47UH	
L364	1-412-029-11	INDUCTOR CHIP 10UH	
L365	1-410-389-11	INDUCTOR CHIP 47UH	
L366	1-410-383-11	INDUCTOR CHIP 15UH	
L367	1-410-385-11	INDUCTOR CHIP 22UH	
L368	1-410-393-11	INDUCTOR CHIP 100UH	
L369	1-410-393-11	INDUCTOR CHIP 100UH	
L370	1-410-392-11	INDUCTOR CHIP 82UH	
L371	1-410-393-11	INDUCTOR CHIP 100UH	
L372	1-410-393-11	INDUCTOR CHIP 100UH	
L373	1-410-656-11	INDUCTOR CHIP 150UH	
L374	1-410-380-21	INDUCTOR CHIP 8.2UH	
L375	1-408-795-21	INDUCTOR CHIP 330UH	
L376	1-410-655-11	INDUCTOR CHIP 120UH	
L377	1-410-387-11	INDUCTOR CHIP 33UH	
L379	1-410-655-11	INDUCTOR CHIP 120UH	
L380	1-410-657-21	INDUCTOR CHIP 180UH	
L381	1-408-795-21	INDUCTOR CHIP 330UH	
L382	1-410-167-41	INDUCTOR CHIP 820UH	
L383	1-408-795-21	INDUCTOR CHIP 330UH	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
L384	1-410-393-11	INDUCTOR CHIP 100UH	
L385	1-410-381-11	INDUCTOR CHIP 10UH	
L386	1-410-392-11	INDUCTOR CHIP 82UH	
L387	1-410-388-21	INDUCTOR CHIP 39UH	
L389	1-410-655-11	INDUCTOR CHIP 120UH	
L390	1-410-377-11	INDUCTOR CHIP 4.7UH	
L391	1-410-388-21	INDUCTOR CHIP 39UH	
L392	1-410-384-11	INDUCTOR CHIP 18UH	
L393	1-410-387-11	INDUCTOR CHIP 33UH	
L395	1-410-388-21	INDUCTOR CHIP 39UH	
L396	1-410-391-11	INDUCTOR CHIP 68UH	
L580	1-408-797-11	INDUCTOR CHIP 470UH	

TRANSISTOR

Q250	8-729-905-23	TRANSISTOR 2SA1576R	
Q251	8-729-905-35	TRANSISTOR 2SC4081R	
Q252	8-729-905-23	TRANSISTOR 2SA1576R	
Q253	8-729-109-42	TRANSISTOR 2SK94X2	
Q254	8-729-905-18	TRANSISTOR DTC144EU	
Q361	8-729-101-07	TRANSISTOR 2SB798	
Q362	8-729-905-23	TRANSISTOR 2SA1576R	
Q363	8-729-905-23	TRANSISTOR 2SA1576R	
Q364	8-729-905-23	TRANSISTOR 2SA1576R	
Q365	8-729-905-35	TRANSISTOR 2SC4081R	
Q366	8-729-905-35	TRANSISTOR 2SC4081R	
Q367	8-729-905-23	TRANSISTOR 2SA1576R	
Q368	8-729-905-23	TRANSISTOR 2SA1576R	
Q369	8-729-905-35	TRANSISTOR 2SC4081R	
Q370	8-729-905-35	TRANSISTOR 2SC4081R	
Q371	8-729-905-35	TRANSISTOR 2SC4081R	
Q372	8-729-905-35	TRANSISTOR 2SC4081R	
Q373	8-729-905-35	TRANSISTOR 2SC4081R	
Q374	8-729-905-35	TRANSISTOR 2SC4081R	
Q375	8-729-905-35	TRANSISTOR 2SC4081R	
Q376	8-729-905-35	TRANSISTOR 2SC4081R	
Q377	8-729-905-35	TRANSISTOR 2SC4081R	
Q378	8-729-905-12	TRANSISTOR DTA144EU	
Q379	8-729-905-35	TRANSISTOR 2SC4081R	
Q380	8-729-101-07	TRANSISTOR 2SB798	
Q382	8-729-905-18	TRANSISTOR DTC144EU	
Q383	8-729-905-35	TRANSISTOR 2SC4081R	
Q385	8-729-905-35	TRANSISTOR 2SC4081R	
Q386	8-729-905-35	TRANSISTOR 2SC4081R	
Q387	8-729-905-23	TRANSISTOR 2SA1576R	
Q388	8-729-102-07	TRANSISTOR 2SC2223F13	
Q389	8-729-905-35	TRANSISTOR 2SC4081R	
Q390	8-729-905-35	TRANSISTOR 2SC4081R	
Q391	8-729-905-35	TRANSISTOR 2SC4081R	
Q392	8-729-905-35	TRANSISTOR 2SC4081R	
Q393	8-729-905-35	TRANSISTOR 2SC4081R	
Q394	8-729-905-23	TRANSISTOR 2SA1576R	
Q395	8-729-905-12	TRANSISTOR DTA144EU	
Q396	8-729-905-18	TRANSISTOR DTC144EU	
Q397	8-729-905-18	TRANSISTOR DTC144EU	
Q398	8-729-905-18	TRANSISTOR DTC144EU	
Q399	8-729-102-07	TRANSISTOR 2SC2223F13	
Q400	8-729-102-07	TRANSISTOR 2SC2223F13	
Q401	8-729-122-63	TRANSISTOR 2SA1226E4	
Q402	8-729-122-63	TRANSISTOR 2SA1226E4	
Q403	8-729-122-63	TRANSISTOR 2SA1226E4	
Q404	8-729-122-63	TRANSISTOR 2SA1226E4	
Q405	8-729-905-18	TRANSISTOR DTC144EU	
Q406	8-729-102-07	TRANSISTOR 2SC2223F13	
Q407	8-729-905-57	TRANSISTOR DTA124EU	
Q408	8-729-102-07	TRANSISTOR 2SC2223F13	
Q409	8-729-102-07	TRANSISTOR 2SC2223F13	
Q410	8-729-905-35	TRANSISTOR 2SC4081R	
Q411	8-729-905-35	TRANSISTOR 2SC4081R	
Q412	8-729-905-35	TRANSISTOR 2SC4081R	
Q413	8-729-905-12	TRANSISTOR DTA144EU	
Q414	8-729-102-07	TRANSISTOR 2SC2223F13	
Q415	8-729-122-63	TRANSISTOR 2SA1226E4	
Q416	8-729-905-61	TRANSISTOR DTC124EU	
Q417	8-729-905-18	TRANSISTOR DTC144EU	
Q418	8-729-905-12	TRANSISTOR DTA144EU	
Q420	8-729-905-18	TRANSISTOR DTC144EU	
Q421	8-729-905-35	TRANSISTOR 2SC4081R	
Q424	8-729-905-18	TRANSISTOR DTC144EU	
Q425	8-729-905-35	TRANSISTOR 2SC4081R	
Q426	8-729-905-35	TRANSISTOR 2SC4081R	
Q427	8-729-905-23	TRANSISTOR 2SA1576R	
Q580	8-729-905-35	TRANSISTOR 2SC4081R	
Q581	8-729-905-35	TRANSISTOR 2SC4081R	
Q582	8-729-905-35	TRANSISTOR 2SC4081R	

RESISTOR

R251	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R252	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R253	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R254	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R255	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R256	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R257	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R258	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R259	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R260	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R261	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R262	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R263	1-216-027-00	METAL GLAZE 120 5% 1/10W	
R264	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R265	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R266	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R267	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R268	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R269	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R270	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R271	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R272	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R273	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R274	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R275	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R276	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R277	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R360	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R361	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R362	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R363	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R364	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R365	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R366	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R368	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R369	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R370	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R371	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R372	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R373	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R374	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R375	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R376	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R377	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R378	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R379	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R380	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R381	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R382	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R383	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R384	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R385	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R386	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R387	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R388	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R389	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R390	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R391	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R392	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R394	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R395	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R397	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R398	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R399	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R401	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R402	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R403	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R405	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R406	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R407	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R408	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R409	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R411	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R412	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R413	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R414	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R415	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R416	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R417	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R418	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R419	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R420	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R421	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R422	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R423	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R424	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R425	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R426	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R427	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R428	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R429	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R430	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R431	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R432	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R433	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R434	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R435	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R436	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R437	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R438	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R439	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R440	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R441	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R442	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R443	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R444	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R445	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R446	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R447	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R448	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R449	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R450	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R451	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R452	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R453	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R454	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R455	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R456	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R457	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R458	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R459	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R460	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R461	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R462	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R463	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R464	1-216-077-00	METAL GLAZE	15K	5%	1/10W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R465	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R466	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R467	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R468	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R469	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R470	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R471	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R472	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R473	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R474	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R475	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R476	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R477	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R478	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R479	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R480	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R481	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R482	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R483	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R485	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R486	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R487	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R488	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R489	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R490	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R491	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R492	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R493	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R494	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R495	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R496	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R497	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R498	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R499	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R500	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R501	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R502	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R503	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R504	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R505	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R506	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R507	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R508	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R509	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R510	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R511	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R512	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R513	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R514	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R515	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R516	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R517	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R518	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R519	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R520	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R521	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R522	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R523	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R524	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R525	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R526	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R527	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R528	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R529	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R531	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R532	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R533	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R535	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R536	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R537	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R538	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R539	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R540	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R541	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R542	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R543	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R544	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R545	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R546	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R547	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R548	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R549	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R550	1-216-138-00	METAL GLAZE	3.3	5%	1/8W	
R551	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R552	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R553	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R554	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R555	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R556	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R557	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R558	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R559	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R560	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R561	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R562	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R563	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R564	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R565	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R566	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R567	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R569	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R570	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R571	1-216-131-11	METAL GLAZE	2.7M	5%	1/10W	
R572	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R573	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R574	1-216-121-00	METAL GLAZE	1M	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R575	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R576	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R577	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R578	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R580	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R581	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R582	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R584	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R585	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R586	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R587	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R588	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R589	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R590	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R591	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R592	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R593	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R595	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R596	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R597	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R598	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R599	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R600	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R601	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R602	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R603	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R604	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R605	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R606	1-216-015-00	METAL GLAZE	39	5%	1/10W	

VARIABLE RESISTOR

RV250	1-230-873-11	RES, ADJ, METAL GLAZE 47K
RV360	1-230-867-11	RES, ADJ, METAL GLAZE 1K
RV361	1-230-870-11	RES, ADJ, METAL GLAZE 10K
RV362	1-230-873-11	RES, ADJ, METAL GRAZE 47K
RV363	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K
RV364	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K
RV365	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K
RV366	1-230-867-11	RES, ADJ, METAL GRAZE 1K
RV367	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K
RV368	1-230-870-11	RES, ADJ, METAL GRAZE 10K
RV369	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K
RV370	1-230-873-11	RES, ADJ, METAL GRAZE 47K
RV372	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K
RV373	1-230-873-11	RES, ADJ, METAL GRAZE 47K
RV374	1-230-866-11	RES, ADJ, METAL GRAZE 470

TERMINAL PIN

TP364	*1-535-622-11	PIN, TERMINAL
TP365	*1-535-622-11	PIN, TERMINAL

CRYSTAL

X250	1-567-827-11	VIBRATOR, CRYSTAL

Ref.No	Part No.	Description	Remark
	*A-7070-637-A	FD-6 BOARD, COMPLETE	

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CONNECTOR

CN150	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P

SWITCH

S150	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (ZERO MEMO)
S151	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (EDIT REV)
S152	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (DATE)
S153	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (COUNTER RESET)
S154	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (EDIT CUE)
S155	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (TIME)

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*A-7070-639-A EJ-4 BOARD, COMPLETE

****

SWITCH

S169	1-571-102-11	SWITCH, SLIDE (EJECT)

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*1-625-994-11 FV-1 BOARD

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CONNECTOR

CN160	1-566-527-11	CONNECTOR, FPC (ZIF) 11P

SWITCH

S160	1-571-101-11	SWITCH, SLIDE (POWER)
S163	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PAUSE)
S164	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PB)
S165	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FF)
S166	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (STOP)
S168	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (REW)

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*A-7061-233-A MC-28 BOARD, COMPLETE

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CAPACITOR

C585	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C586	1-124-225-00	ELECT	100MF	20%	6.3V
C587	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C588	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C589	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C590	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C592	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C593	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C594	1-126-157-11	ELECT 10MF 20%	10V
C595	1-163-081-00	CERAMIC CHIP 0.22MF	25V
C596	1-124-225-00	ELECT 100MF 20%	6.3V
C597	1-163-141-00	CERAMIC CHIP 0.001MF 10%	50V
		CONNECTOR	
CN585	*1-566-196-11	PIN, CONNECTOR (PC BOARD) 3P	
CN586	*1-566-196-11	PIN, CONNECTOR (PC BOARD) 3P	
		DIODE	
D585	8-719-100-13	DIODE RD2.7EB2	
		IC	
IC585	8-759-820-51	IC LA7293	
		TRANSISTOR	
Q585	8-729-905-35	TRANSISTOR 2SC4081R	
		RESISTOR	
R585	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R587	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R588	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R591	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R592	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R593	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R594	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R595	1-216-296-00	METAL GLAZE 0 5% 1/8W	

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*A-7061-236-A VF-13 BOARD, COMPLETE
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Ref.No	Part No.	Description	Remark
	1-526-978-21	SOCKET ASSY, CRT	
	3-713-535-01	CUSHION, CRT	
	*3-725-155-01	INSULATOR, FB	
		CAPACITOR	
C901	1-126-369-11	ELECT 220MF 20%	6.3V
C902	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C904	1-127-486-00	ELECT(SOLID) 47MF 20%	6.3V
C905	1-163-141-00	CERAMIC CHIP 0.001MF 10%	50V
C906	1-163-115-00	CERAMIC CHIP 82PF 5%	50V
C907	⚠.1-162-625-11	CERAMIC CHIP 0.0047MF 5%	50V
C908	⚠.1-163-015-00	CERAMIC CHIP 0.0033MF 10%	50V
C909	1-126-193-11	ELECT 1MF 20%	50V
C911	1-131-388-00	TANTALUM 68MF 10%	3.15V
C912	1-102-038-00	CERAMIC 0.001MF 99%	500V
C913	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C915	1-126-193-11	ELECT 1MF 20%	50V
C916	1-163-037-11	CERAMIC CHIP 0.022MF 10%	25V
C917	1-135-098-21	TANTAL. CHIP 47MF 20%	6.3V
C918	1-162-638-11	CERAMIC CHIP 1MF	16V
C919	1-135-070-00	TANTAL. CHIP 0.1MF 10%	35V
C920	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
		CONNECTOR	
CN901	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P	
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
		CONPOSITION CIRCUIT BLOCK	
CP901	1-238-119-11	RES, ADJ	
		DIODE	
D903	8-719-400-20	DIODE MA152WA	
		IC	
IC901	8-759-420-01	IC AN2512S	
		COIL	
L901	1-408-421-00	INDUCTOR 100UH	
L902	1-410-379-21	INDUCTOR CHIP 6.8UH	
L903	⚠.1-459-858-11	COIL, FERRITE (HLC)	
		TRANSISTOR	
Q903	8-729-106-64	TRANSISTOR 2SD1615	
Q904	8-729-216-32	TRANSISTOR 2SA1163	
		RESISTOR	
R902	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R907	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R908	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R909	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R911	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R912	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R913	1-216-123-11	METAL GLAZE 1.2M 5% 1/10W	
R914	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R915	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R916	1-216-125-00	METAL GLAZE 1.5M 5% 1/10W	
R917	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R919	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R920	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R921	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R922	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R923	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R924	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R925	1-216-336-11	METAL GLAZE 47K 1% 1/10W	
R926	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R928	1-216-870-11	METAL GLAZE 180K 1% 1/10W	
R929	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R930	1-216-089-00	METAL GLAZE 47K 5% 1/10W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

VF-13 TL-18 TL-19 PA-13 ZM-7 LA-1 SW-76

Ref.No	Part No.	Description	Remark
R931	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
		VARIABLE RESISTOR	
RV901	1-230-203-00	RES, ADJ, METAL GLAZE 2.2M	
		TRANSFORMER	
T901 ⚠	1-439-428-11	TRANSFORMER ASSY, FLYBACK	
		THERMISTOR	
TH901	1-807-938-11	THERMISTOR	
**			
	*A-7070-645-A	TL-18 BOARD, COMPLETE **********************	
		DIODE	
D950	8-719-941-34	DIODE GL1HD51	
		RESISTOR	
R950	1-216-037-00	METAL GLAZE 330 5% 1/10W	
**			
	*A-7070-646-A	TL-19 BOARD, COMPLETE **********************	
		DIODE	
D955	8-719-941-34	DIODE GL1HD51	
**			
	*A-7070-703-A	PA-13 BOARD, COMPLETE **********************	
		JACK	
J991	1-550-104-32	HOLDER, BATTERY	
		COIL	
L990	1-412-026-11	INDUCTOR CHIP 1UH	
L991	1-412-026-11	INDUCTOR CHIP 1UH	
L992	1-412-026-11	INDUCTOR CHIP 1UH	
		IC LINK	
PS990 ⚠	1-532-841-21	LINK, IC	
PS991 ⚠	1-532-841-21	LINK, IC	
		RESISTOR	
R990	1-216-295-00	METAL GLAZE 0 5% 1/10W	
		SWITCH	
S990	1-570-870-21	SWITCH, SLIDE (EDIT)	

Ref.No	Part No.	Description	Remark
		CONNECTOR	
W991	1-559-927-41	CABLE, FLAT (1.0MM PITCH) 5P	
W992	1-535-658-11	TERMINAL BOARD	
**			
	*1-625-991-21	ZM-7 BOARD ***********	
		SWITCH	
S970	1-571-315-11	SWITCH, KEY BOARD (TETE)	
S971	1-571-315-11	SWITCH, KEY BOARD (WIDE)	
**			
	*1-625-989-21	LA-1 BOARD ***********	
		SWITCH	
S990	1-571-315-11	SWITCH, KEY BOARD (REC)	
**			
	*1-625-990-21	SW-76 BOARD ************	
		CONNECTOR	
CN930	*1-566-189-11	PIN, CONNECTOR (PC BOARD) 10P	
CN931	*1-566-196-11	PIN, CONNECTOR (PC BOARD) 3P	
CN932	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
		JACK	
J930	1-565-276-11	JACK, ULTRA SMALL 1P (REMOTE)	
J931	1-507-921-00	JACK (EARPHONE)	
		COIL	
L930	1-410-369-11	INDUCTOR CHIP 1UH	
L932	1-410-369-11	INDUCTOR CHIP 1UH	
		SWITCH	
S930	1-553-977-00	SWITCH, SLIDE (STANDBY)	
S931	1-570-689-11	SWITCH, KEY BOARD (REC)	
**			
		MISCELLANEOUS *************	
	A-7090-800-A	DDC ASSY	
	1-535-574-11	TERMINAL, SHAFT GROUND	
	1-542-101-11	MICROPHONE (C-2020)	
	1-547-264-11	LENS, ZOOM (VCL-1206YK)	
	1-559-927-21	CABLE, FLAT (1.0MM PITCH) 11P	
	1-562-879-11	CONNECTOR, CARD EDGE 19P	
	1-562-880-11	CONNECTOR, CARD EDGE 15P	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	1-626-231-11	FP-118 FLEXIBLE BOARD	
	1-807-238-11	SENSOR, DEW CONDENSATION	
C901	1-161-032-00	CAP, CERAMIC 0.01MF	
J361	1-537-142-11	TERMINAL BOARD (AV OUT)	
L951	⚠.1-451-310-21	DEFLECTION YOKE (B/W)	
M901	⚠.A-7048-081-A	DRUM ASSY (DGU-19A-R)	
M902	8-835-309-01	MOTOR, DC BHF-3301C (CAPSTAN)	
M903	⚠.1-541-508-11	MOTOR, DC (LA14-323F) (LOADING MOTER)	
M904	3-707-369-01	METER ASSY, EE (IRIS)	
M905	1-541-536-11	MOTOR, DC (GM-1673) (FOCUS)	
M906	1-541-537-11	MOTOR, DC (GM-1674) (ZOOM)	
S902	1-553-226-00	SWITCH, LEAF (CC DOWN)	
V901	⚠.1-546-065-11	CATHODE-RAY TUBE, B/W (MOIJVV47WB)	

****

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
*3-340-514-01	BAG, PROTECTION	
*3-725-107-01	CUSHION (UPPER)	
*3-725-108-01	CUSHION (LOWER)	
3-769-893-41	MANUAL, INSTRUCTION	
3-769-893-51	MANUAL, INSTRUCTION (AEP/E MODEL)	
3-769-893-61	MANUAL, INSTRUCTION (AEP MODEL)	
3-769-893-71	MANUAL, INSTRUCTION (E MODEL)	

ACCESSORIES AND PACKING MATERIALS (KIT)

Part No.	Description	Remark
1-571-164-11	SWITCH, ANTENNA CHANGE (CABLE) (UK/E/AUS MODEL)	
1-571-164-41	SWITCH, ANTENNA CHANGE(CABLE)(AEP MODEL)	
3-712-673-01	SCREWDRIVER	
3-712-595-21	BELT, SHOULDER	
*3-725-168-31	CARTON, OUTER	
*3-725-169-31	SLEEVE, ACC KIT	
*3-725-170-01	CUSHION (UPPER), ACC	
*3-725-171-01	CUSHION (LOWER), ACC	
** AC-V30	AC POWER ADAPTOR	
*** NP-55	RECHARGABLE BATTERY	
*** RFU-89EA	RF MODULATER	

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE
*** MARK PARTS IS AVAILABLE AS A OPTIONAL ACCESSORIES

****

HARDWARE LIST
****

SCREW

Ref.No	Part No.	Description	Remark
	7-621-255-45	SCREW +P 2X6	
	7-621-255-85	SCREW +P 2X14	
	7-621-772-08	SCREW +B 2X3	
	7-621-772-10	SCREW +B 2X4	
	7-627-850-17	SCREW, PRECISION +P 1.4X2.5	
	7-627-552-07	SCREW, PRECISION +P 1.7X2.5	
	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE3	
	7-627-852-18	SCREW, PRECISION +P 1.7X4 TYPE3	
	7-627-852-38	SCREW, PRECISION +P1.7X1.8 TYPE3	
	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	

STOP RING

Ref.No	Part No.	Description	Remark
	7-624-101-01	STOP RING 1.2 (E TYPE)	
	7-624-102-04	STOP RING 1.5, TYPE -E	

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When indicating parts by reference number, please include the board name.

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